VIDEOSEVEN

N-110

FCC Statement

This equipment has been tested and found to comply with the limits of Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and for if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of following measures

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and receiver.
- Connect the into an outlet on circuit different from that to which the receiver is connected.
- Consult the dealer or an experience radio/TV technician for help.

FCC Warning

To assure continued FCC compliance, the user must a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, unauthorized changes or modifications to ViewSonic products will void the user's authority to operate this device. Thus ViewSonic will not be held responsible for the product and its safety.

CE Certification

CE this device complies with the requirements of the ECC directive 89/3366/EEC with regard to "Electromagnetic compatibility."

Safety Guidelines

Caution: Use a power cable that is properly grounded. always use the AC cords listed below for each area

USA	(UL)
Canada	(CSA)
Germany	(VDE)
Switzerland	(SEV)
Britain	(BASE/BS)
Japan	(Electric Appliance Control Act)

In other areas, use AC cord which meets the local safety standards.

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Appendix A Schematic
Appendix B PCB Layout
Appendix C Exploded Drawing And Parts List

Chapter 1 Features

1.1. On-View on-screen-display digital controlled

1.1.1. User friendly 4-key control and On Screen Display for finest screen adjustment:

- CONTRAST
- BRIGHTNESS
- H-SIZE
- H-POSITION
- V-SIZE
- V-POSITION
- PINCUSHION
- PIN-BALANCE
- TRAPEZOID
- PARALLELOGRAM
- TILT
- PURITY (W/CORNER PURITY)
- ZOOM
- HOURGLASS
- CUPID BOW
- VLINEAR-CENTER
- VLINEAR-SYMMETRY
- H-CONVERGENCE
- V-CONVERGENCE
- LANGUAGE
- DEGAUSS
- OSD-H POS
- OSD-V POS
- MOIRÉ
- VIEWMATCH COLOR

1.1.2. Factory geometric settings for 15 preset timings.

1.1.3. Geometric settings for 15 user definable timings.

1.1.4. Factory setting for Color Temperature modes(5500°K,6500°K,9300°K) and 1 user adjustable Color Temperature.

1.1.5. Auto-tracking for stable synchronize system.

1.2. Power-line-input operating range

90~132Vac/60Hz or 180~264Vac/50Hz universal

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1.3. DPMS (Display Power Management System)

1.3.1. The PF790 is compliant with Energy Star as well as VESA DPMS spec.

1.3.2. The power dissipation is less than 20 watts for Suspend/Standby mode and 5 watts for Off mode.

1.4. Operating Frequency range

The PF790 provides wide operating ranges of horizontal frequency from 30 to 96KHz and Vertical frequency from 50 to 160Hz. This range makes the PF790 to be compatible with most video timing standard such as VGA, SVGA, VESA, XGA, ... and etc.. It supports up to 1024 x 768 @85Hz, 1280 x 1024 @85Hz and 1600 x 1200 @ 75Hz, 1600 x 1200 @ 85Hz.

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Chapter 2 Specification

CRT	MITSUBISHI 19-inch, 90 degree deflection. .25mm strip pitch, tinted, anti-glare, anti-static K-coating, Phospher B22
Signal Input Interface	Video: RGB analog 0.7Vp-p/75ohm (1Vp-p with sync) Sync: H.V. Separate Sync H.V. Composite Sync (TTL Compatible) Sync on green
Synchronization	Horizontal: 30 to 96KHz Vertical: 50 to 160Hz Non-interlaced/interlaced
Connector	Signal: 15pin mini D-sub Power: 3-pole receptacle
Video Bandwidth	200MHz nominal
Nominal Display Area	353x265mm
Power Supply	90~264Vac Universal
Power Consumption	140W max.
Power Saving	Suspend <15W OFF < 3W

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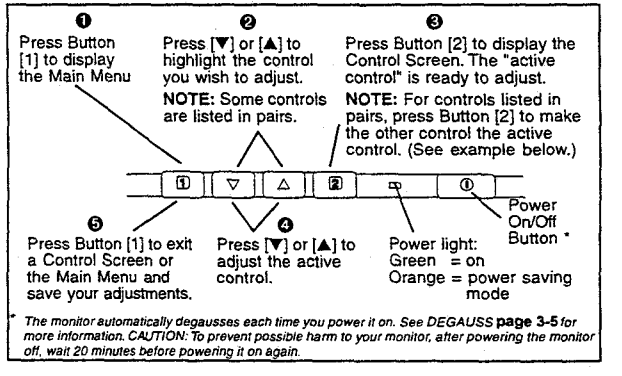
Chapter 3 Controls and OSD's

Adjusting the Screen Image

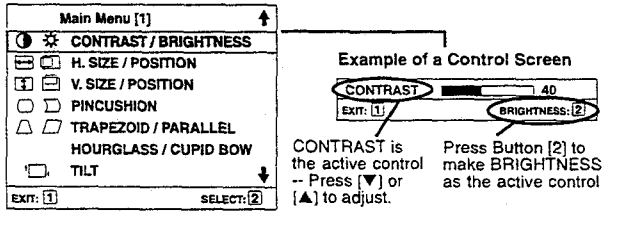
To adjust the screen image of your **ViewSonic *PF790*** monitor use the buttons on the Front Control Panel together with the *controls* on the Main Menu. Follow steps ❶ through ❺ in sequence as shown below.

Front Control Panel


❶ Press Button [1] to display the Main Menu
❷ Press [▼] or [▲] to highlight the control you wish to adjust.
NOTE: Some controls are listed in pairs.
❸ Press Button [2] to display the Control Screen. The "active control" is ready to adjust.
NOTE: For controls listed in pairs, press Button [2] to make the other control the active control. (See example below.)
Power On/Off Button *
❺ Press Button [1] to exit a Control Screen or the Main Menu and save your adjustments.
❹ Press [▼] or [▲] to adjust the active control.
Power light: Green = on Orange = power saving mode

* *The monitor automatically degausses each time you power it on. See DEGAUSS* **page 3-5** *for more information. CAUTION: To prevent possible harm to your monitor, after powering the monitor off, wait 20 minutes before powering it on again.*

OnView® Main Menu, part 1



◑ **CONTRAST** adjusts foreground white level of the screen image. [▼] decreases contrast, [▲] increases contrast.

☼ **BRIGHTNESS** adjusts background black level of the screen image. [▼] decreases brightness, [▲] increases brightness.

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OnView Main Menu, part 1, continued

H. SIZE (Horizontal Size) adjusts the width of the screen image.
[▼] decreases width, [▲] increases width.

H. POSITION (Horizontal Postion) moves the screen image left or right.
[▼] moves screen image left, [▲] moves screen image right.

V. SIZE (Vertical Size) adjusts the height of the screen.
[▼] decreases height, [▲] increases height.

V. POSITION (Vertical Position) moves the screen up and down.
[▼] moves screen image down, [▲] moves screen image up.

PINCUSHION straightens vertical sides of the screen image.
[▼] curves vertical edges inward, [▲] curves vertical edges outward.

PIN BALANCE curves the vertical edges of the screen image to the left or right. [▼] curves vertical edges to the left, [▲] curves vertical edges to the right.

TRAPEZOID makes vertical edges of the screen image parallel.
[▼] narrows top and widens bottom, [▲] widens top and narrows bottom.

PARALLEL (Parallelogram) slants vertical sides of the screen image to the left or right.
[▼] slants vertical sides to left, [▲] slants sides edges to right.

HOURGLASS straightens the curve at the top or bottom of vertical sides of the screen image that appear as "bulges".
[▼] straightens bottom portion of vertical sides , [▲] straightens top portion of vertical sides.
NOTE: *Use* HOURGLASS and CUPID BOW *only if* PINCUSHION and PIN BALANCE do not completely straighten the vertical sides of the screen image.

CUPID BOW straightens the slight curve along the vertical sides of the screen image, appearing as small "ripples".
[▼] straightens bottom portion of vertical sides , [▲] straightens top portion of vertical sides.

TILT rotates entire screen image.
[▼] rotates screen image counter-clockwise, [▲] rotates screen image clockwise.

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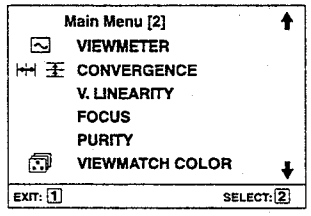
To exit the OnView® menu or screen & save changes, press button [1].

OnView Main Menu, part 2



VIEWMETER® displays the frequency signal input (horizontal scan and refresh rate) coming from the graphics card in your computer. *See your graphics card user's guide for more details.*

H. CONVERGENCE (Horizontal Convergence) adjusts vertical color alignment. Use only if you see red or blue around the vertical segments of black letters on a white background.
Press [▼] or [▲] to adjust.

V. CONVERGENCE (Vertical Convergence) adjusts horizontal color alignment. Use only if you see red or blue around the horizontal segments of black letters on a white background.
Press [▼] or [▲] to adjust.

V. LINEARITY (Vertical Linearity) minimizes distortion that vertical segments of the screen image contain.
Press [▼] or [▲] to adjust.
NOTE: VERTICAL LINERARITY is an advanced control to be used for set up and calibration only. To return this control to the setting preset at the factory use DATA RECALL **(see page 3-5)**.

FOCUS adjusts the sharpness of the screen image.
Press [▼] or [▲] to adjust.

PURITY adjusts the color evenesss of various parts of the screen image. Press button [2] to select one of the five PURITY controls (see illustration **page 3-4**), then press [▼] and [▲] to adjust.
NOTE: If you see unevenness in a color (such as one area of a color appearing darker than another area), first use DEGAUSS **(see page 3-5)**, then if color unevenness is still present, use PURITY.

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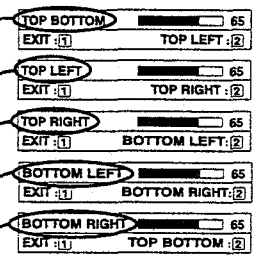
OnView Main Menu, part 2, continued

PURITY (continued)

TOP BOTTOM PURITY (Top center and bottom center)
TOP LEFT PURITY (Top left corner)
TOP RIGHT PURITY (Top right corner)
BOTTOM LEFT PURITY (Bottom left corner)
BOTTOM RIGHT PURITY (Bottom right corner)

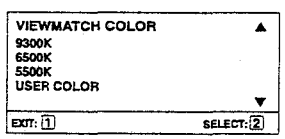


VIEWMATCH® COLOR provides four color adjustment options: three preset color temperatures (9300°K, 6500°K, 5500°K) and USER COLOR, which allows you to individually adjust red, green, and blue (RGB).

To activate one of the preset color temperatures:

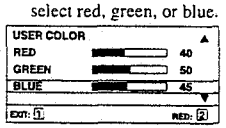
With a preset color temperature highlighted, press button [2].

NOTE: The factory setting for the monitor is 9300°K, the color temperature most frequently used in offices with fluorescent lights.



To adjust a USER COLOR:

1 From the USER COLOR screen shown below, press button [2] to select red, green, or blue.



To select the highlighted color (blue in this example) as the active control, press Button [2]; then adjust the color using [▼] or [▲].

2 To adjust a highlighted color, press [▼] or [▲]. The number next to the status bar changes accordingly.

3 To save your adjustment and exit a color, press button [1].

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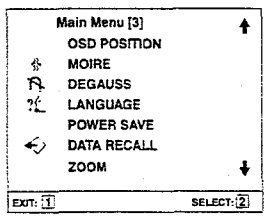
To exit the OnView® menu or screen & save changes, press button [1].

OnView Main Menu, part 3



OSD POSITION allows you to reposition the OnView display (including all menus and control screens).
Press [▼] or [▲] to move the OSD.

MOIRE reduces interference that causes unwanted color textures or patterns.
Press [▼] or [▲] until interference patterns are minimized.

DEGAUSS removes the build-up of magnetic fields that can cause irregular colors to appear around the edges of screen images.

There are two ways to degauss your monitor -- *automatically* each time you power the monitor on -- and *manually:* with DEGUASS highlighted on the Main Menu, press button [2] .

CAUTION: ***Do not degauss repeatedly.*** *Doing so can be harmful to the monitor. Wait at least 20 minutes before degaussing again.*

LANGUAGE allows you to choose from among five languages for the OnView Main Menu and Control Screens: English, French, German, Italian, and Spanish.
Press button [2] to select a language,

POWER SAVE allows you to select (and deselect) the Power Saving Mode, which has three states: Suspend, Standby, and Off-
Press [▼] or [▲] to select/deselect the Power Saving Mode.

DATA RECALL returns all controls back to factory settings *only if* the monitor is set to one of the Preset Timing Modes.
Press button [2] to activate DATA RECALL.

NOTE: Using this control resets color to the 9300° K.

ZOOM expands and contracts the entire screen image.
[▼] contracts the image, [▲] expands the image.

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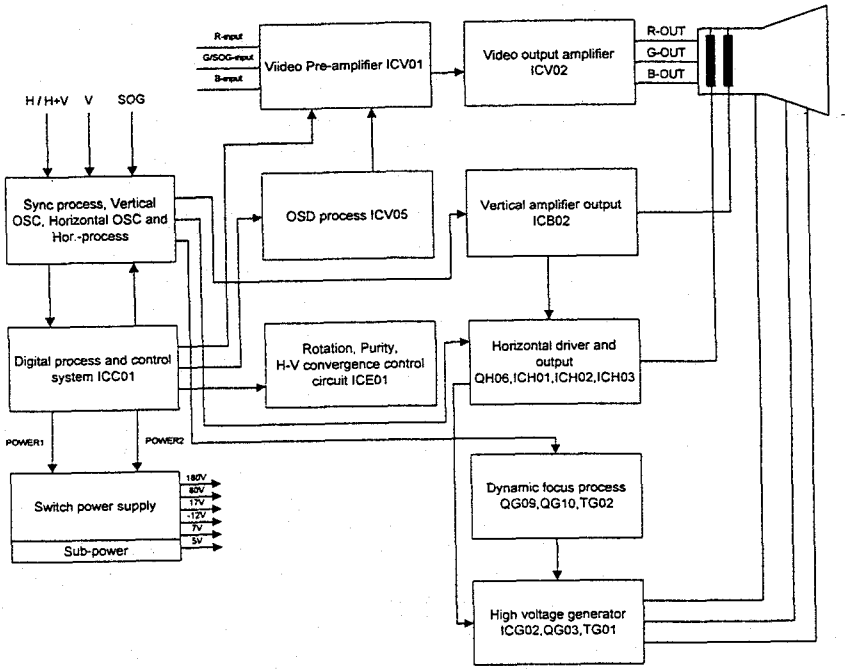
Chapter 4 Block Diagram



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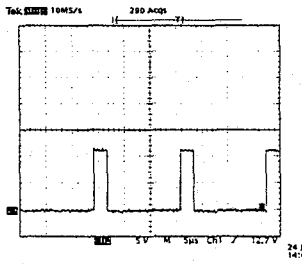
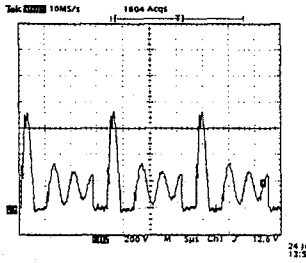
Chapter 5 Measured Waveforms


S1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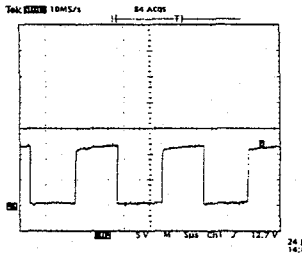
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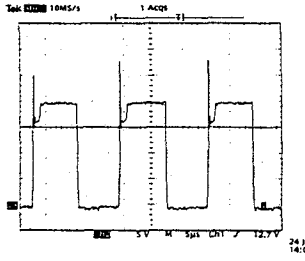
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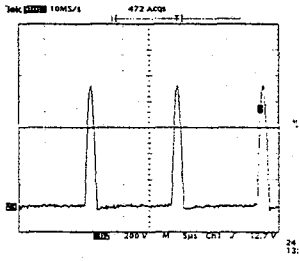
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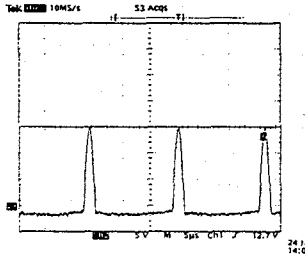
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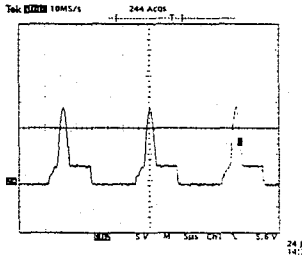
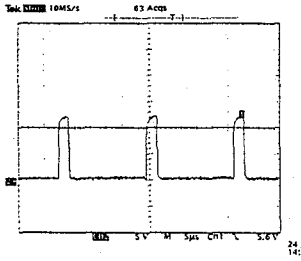

S7


S8

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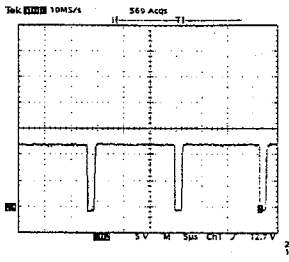
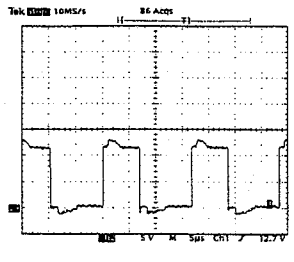


S9



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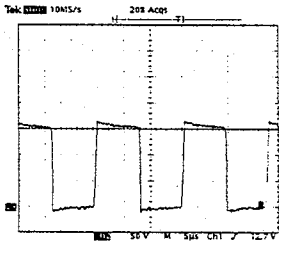
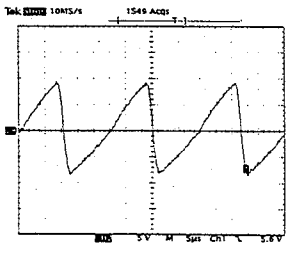


S11



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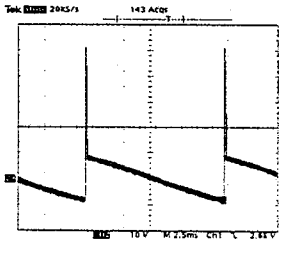

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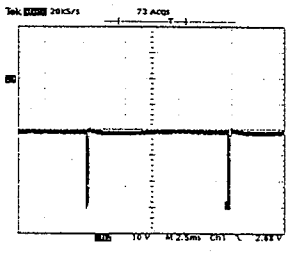

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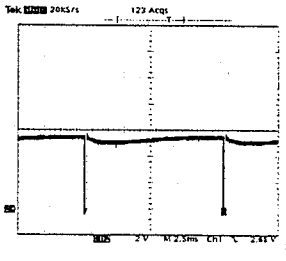
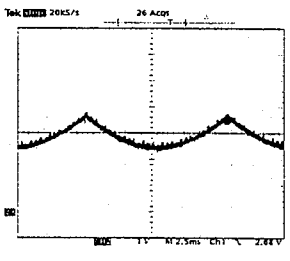


S15



S16

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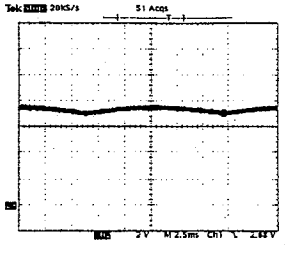
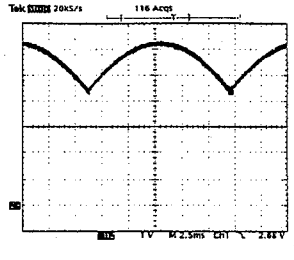


S17



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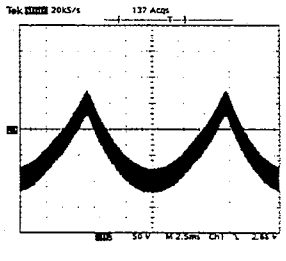
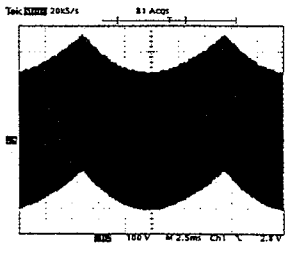
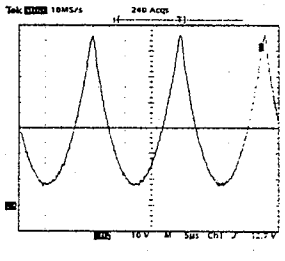


S19



S20



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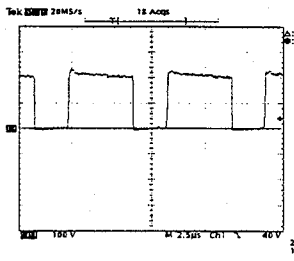

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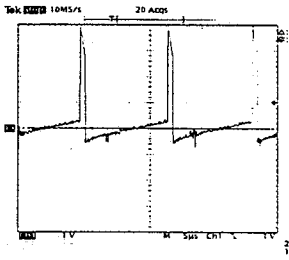

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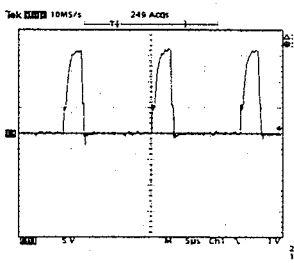

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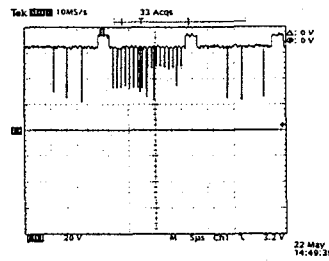

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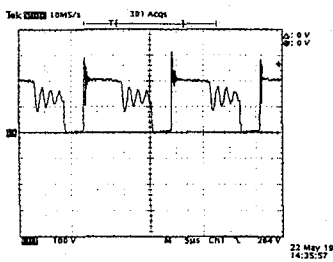

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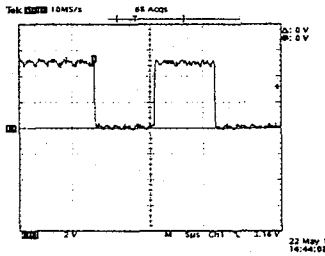

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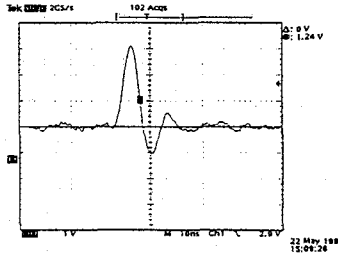

S28

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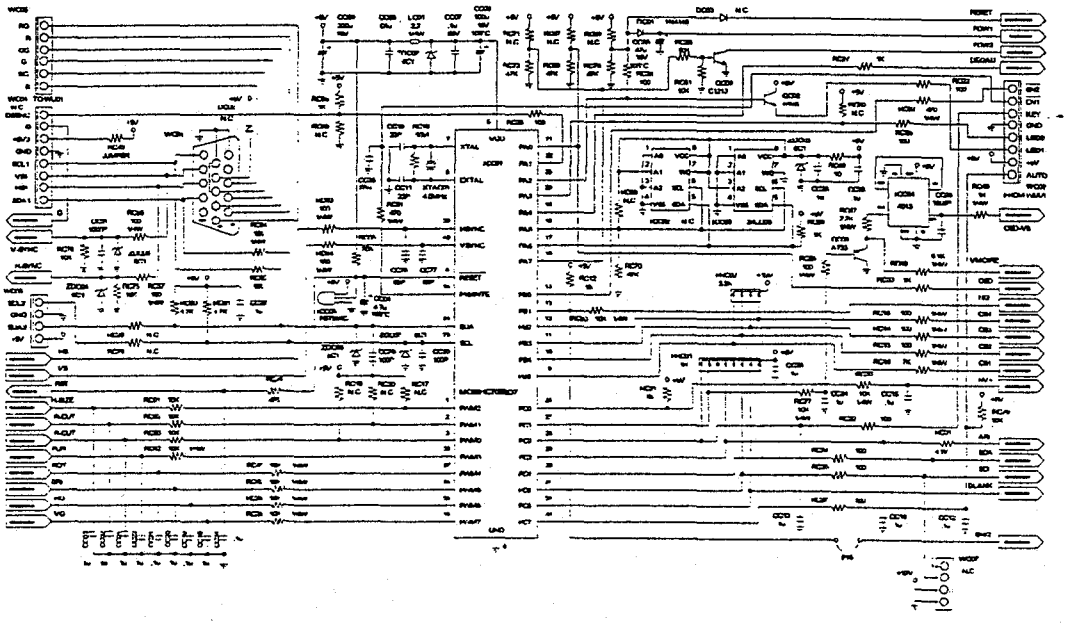
Chapter 6 Theory of circuit operation

6.1. Micro Controller System



The micro controller system is composed of the MCU, the serial E2PROM, the voltage monitor circuit, the encoder signal reshaping circuit.

6.1.1. The MCU (ICC01, 68HC705BD7) mainly provides the following functions:

6.1.1-a. Detect the system input signals and send proper control signals via general purpose I/O pins.

6.1.1-b. Output 10 PWM's to adjust the voltage controlled functions such as H-Size, Tilt,..,etc.

6.1.1-c. Control **ICX01**(TDA8444) via I2C bus to adjust the corner purity.

6.1.1-d. Control the following characteristics of the deflection IC TDA9106 and the video pre-amp M52743 via I2C bus:

- **TDA9106:**
  1. H-Phase (H-Position)
  2. V-Size, V-Position
  3. Pincushion, SPin-Balance
  4. Trapezoid, Parallelogram
  5. SPin-Center, SPin-SCurve
  6. VLinearity-Center, VLinearity-Symmetry
  7. HD-Duty
  8. HFocus-Amptitude, HFocus-Keystone

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- **M52743:**
  1. Contrast, OSD Contrast
  2. R,G,B gain
  3. R,G,B output DC level
  4. Internal clamping pulse position & width

6.1.1-e. Control the OSD IC CD0018AD via SPI bus to display the monitor status.

6.1.1-f. Detect the input sync characteristics via TDA9106, identify the input timing, read the according settings in the E2PROM and then send proper controls such as CS-switch, H-F2V, LEDs display, Contrast, Brightness, H-Size, H-Pos, ..., etc.

6.1.1-g. Monitor the level of ADC input ABL and then send the proper contrast setting in M52743 to achieve the beam current limitation .

6.1.1-h. Set and detect the display board status and implement the OSD Control function via ADC input KEY and Up/Down keys.

6.1.1-i. Provide the DDC1/2B/2B+ interface to PC system or auto-alignment system.

The serial E2PROM memory device to reserve the fixed monitor parameters, the factory alignment result, the user adjusting result, the user defined timing characteristics, ..., etc. While ICC02 (24LC08) is write able and ICC03 (24LC04) is only readable and optional to change the preset timing modes and/or their ID/name displayed on the OSD.

The propose of the ICC05(PST994C) is to keep the MCU working normal when the supply voltage is unstable. It is done by resetting the MCU while the supply voltage drops.

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6.2. High Voltage Control Circuit

High Voltage Control Circuit is working basically by using switching theory with the main component ICG02 (UC2843).

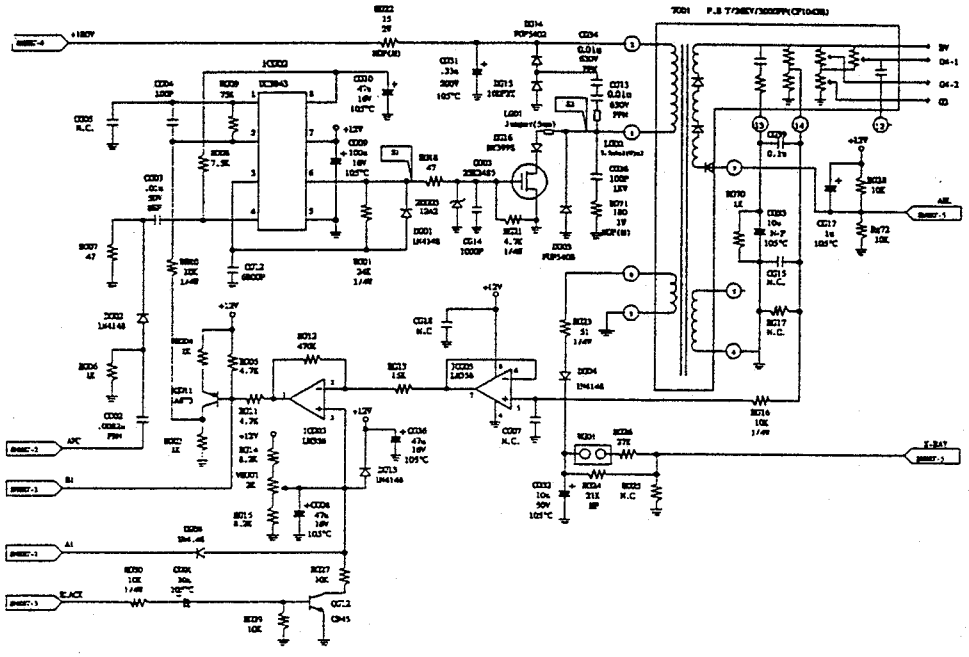
6.2.1. Circuit operating theory is explained as following:

6.2.1-a. When Power ON and the Vcc DC level of pin7 of ICG02 (UC2843) exceeding 8.4V, ICG02 starts to work and the oscillate frequency is decided by RG08, CG03.

6.2.1-b. When ICG02 is working normally the output square wave of pin6 ***as figure S1*** will turn on QG03. The ON/OFF cycle of QG03 will make the primary of FBT (pin 1 ~2) acted like a Switching Power X'FMR ***as figure S2.***

6.2.1-c. AFC signal ***as figure S6*** is differential by CG02, RG06 and connected with CG03 in order to force ICG02 in synchronization. Then, the high voltage will be always synchronized with horizontal deflection.

6.2.1-d. Usually loading change will cause unstable condition, so a high voltage feed back system is designed to maintain the stability of the high voltage circuit. This feed back system is started from voltage sensor on the pin11 of the FBT. This sensor voltage compares with voltage of the OP1 via the buffer (OP2) of LM358 and returns to ICG02.



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6.2.2. LM358 OP1 is controlled by following factors:

6.2.2-a. A feed back reference high voltage circuit that consists of RG14, VRG01, and RG15 to adjust the high voltage.

6.2.2-b. A1 and B1 voltages are controlled by QH22, QH23, ICH02 OP1 and TH02:

(1) When horizontal deflection is no function, TH02 secondary can not sensor the voltage form, so QH22 turns OFF and QH23 turns ON to make B1 voltage dropped. QG11 collector voltage raises to make the pin2 voltage of ICG02 also increased. The duty cycle of pin6 of ICG02 is reduced to zero gradually to shut down the high voltage. In the same time, the high voltage Soft-Start CG08 is discharged via A1 route to secure the high voltage is re-started at Soft-Start status.

(2) When horizontal deflection is working, TH02 sensors the voltage form as figure S12. Via ICH02 OP1 and CH06 processors, A1 and B1 voltage will not be by affected by QH22 and this will keep the high voltage works normally.

6.2.2-c. During the period the horizontal frequency is changed, for example, from 31KHz to 56 KHz, HLACK will be from low (31KHz) to high (the time frequency changes) and to low (56 KHz). HLACK is controlled by pin 37 (HLKOUT) of ICB01 TDA9106. After differential circuit that consists of RG30, CG01, and RG29, the signal will turn QG12 on when frequency changed and reduce the high voltage by paralleling with RG27, VRG01 and RG15.

6.3. X-RAY High Voltage Protection CKT

X-RAY High Voltage Protection CKT is to get a DC level voltage by utilizing the output waveform of FBT's pin6 to pin3 (GND) via a rectifier consists of DG04, CG32. This DC level voltage inputs to the pin15 (X-RAY) of ICB01 TDA9106. The preset X-RAY protection voltage is 8 volts. If the high voltage is higher than the preset voltage, the DC level voltage input into the pin15 will also be higher than 8 volts to make the pin21 of ICB01 off. It also means the HD signal is off, then horizontal deflection is off and the high voltage is also off.

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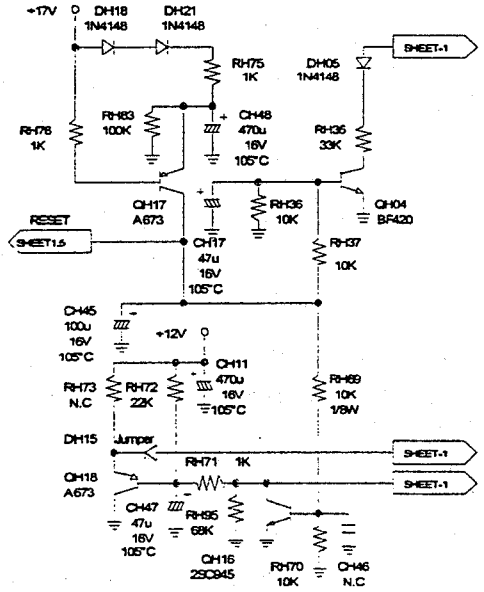
6.4. Soft-Start & Power Off Protection CKT & Suspend Control CKT



6.4.1. Soft-Start:

During the instant period of power on, unstable condition of horizontal deflection will easily damage components. So, Soft-Start is designed to control such an unstable condition.

When power on, during the period that 12 volts increases from 0 volts to 12 volts, the DC level of QH18 & DH 15 is controlled by RC Constant circuit, RH72 and CH47.

DH15 controls the level at pin5 of ICH01 LM555. The width of the duty cycle at pin3 of ICH01 LM555 will be gradually increased. Till the CH47 is fully charged, QH18 is off and DH15 is not working. In a similar working theory, RH72, CH47 and RH71 control the level of DH17.

6.4.2. Power Off Protection CKT:

In order to turn off the B+ of horizontal deflection when power is off, QH17, QH04 and QH16 are designed to meet the purpose.

When power off, the 17 volts decreases and the base level of QH17 is dropped. CH48 is discharged slower than that of the base of QH17, so QH17 is still on. The discharge voltage of CH48 goes through QH17 to make QH04 and QH16 also on.

6.4.2-a. When QH04 is on, the B+ driving waveform is off to make horizontal defection shuts off suddenly.

6.4.2-b. QH16 is on and controls the level of DH17 to make CH47 discharged through RH71 and QH16. This will guarantee the Soft-Start works normally when power on and off consecutively.

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6.5. Video-Amplifier/On-Screen-Display

The video amplifier system is consist of the Pre-Amplifier, the Video-Power-Amplifier, and the Cutoff-Voltage-Adjusting circuits.

6.5.1. The functions of the Pre-Amplifier ICV01(M52743) include:

6.5.1-a. The small signal video amplifier controlled by MCU via I2C bus for the features of contrast (main gain control), output DC level 3 sub gain controls (R-Gain, G-Gain, B-Gain), clamping pulse source (H-sync) and the clamping pulse width.

6.5.1-b. The OSD mixer processes the OSD1, OSD2, OSD3 on Pin2,5,8 and the OSD Blk input on Pin13 and the OSD contrast is controlled by MCU via I2C bus.

The Video-Power-Amplifier ICV02 is a 3-channel hybrid-IC which functions as a cascade type transistor amplifier to reach the high bandwidth performance. The H-Blanking signal is sent to the emitters of the 3 cascade amplifiers via QV01 and DV10, DV11, DV15 to turn off the amplifiers' output during horizontal retrace period.

The Cutoff-Adjusting circuit consist of ICV06, QV03, QV04 is to provide the function of dark/background white-balance control by varying the peak voltages on the CRT cathodes. (Only R, B guns are variable and G gun is fixed)

ICV05 (CD0018AD) serving as the OSD generator outputs the R, G, B,FBKG(FBLK) signals that contain the information by which the MCU shows the monitor's status and the user adjusting indications. The R, G, B, FBKG signals are synchronized by the horizontal and vertical deflection sync input on Pin5 and Pin10. The MCU controls the OSD via the signals SS, SDA, SCL on Pin6,7,8.

*(the schematic diagram refer to **the sheet 7 of the Schematic section**)*

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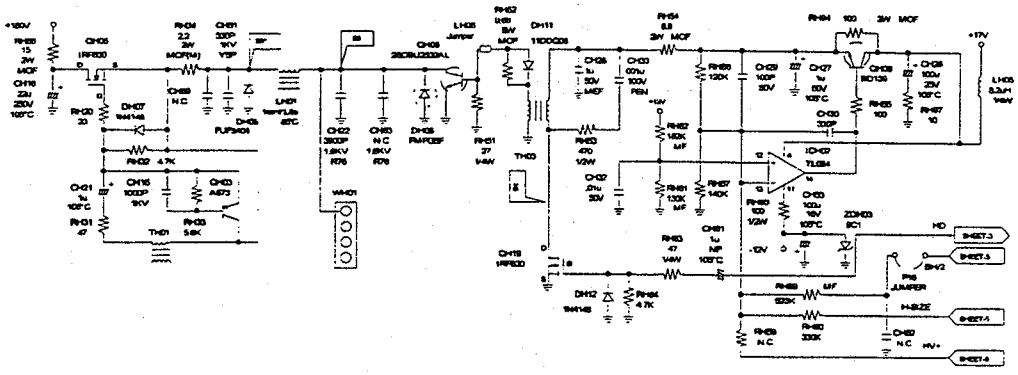
6.6. Horizontal Deflection Driving Circuit



6.6.1. HD signal ***as figure S3*** is output from pin21 of ICB01 TDA9106 and through QB01 and QB02 to drive QH19 IRF630 and TH03. ***Refer to figure S4***

6.6.2. TH03 controls the driving current via ICH02 TL084 OP and QH09.

6.6.2-a. ICH02 TL084 OP4 control the reference voltage via RH62 and RH61.

6.6.2-b. RH56 and RH57 control the negative feed back to stabilize the driving current.

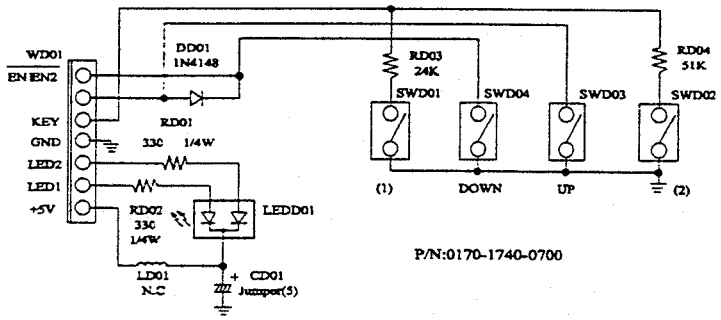
6.6.2-c. Via RH99, BH/2+ controls the driving current at different frequencies.

6.6.2-d. H-Size is via RH60 to adjust the driving current at size variations.

6.6.3. Through above items A and B and utilizing TH03 to drive QH06, the LC oscillation circuit that consists of defection coil CH22 and DH08 works. ***Refer to figure S5***

6.7. Display Circuit

The display board includes the power LED driving signals (LED1 and LED2), the '1'/'2' key detecting circuit (SWD 01, 02 to MCU ADC input), and the up/down key detecting circuit (SWD 03,04 to MCU I/O pins).



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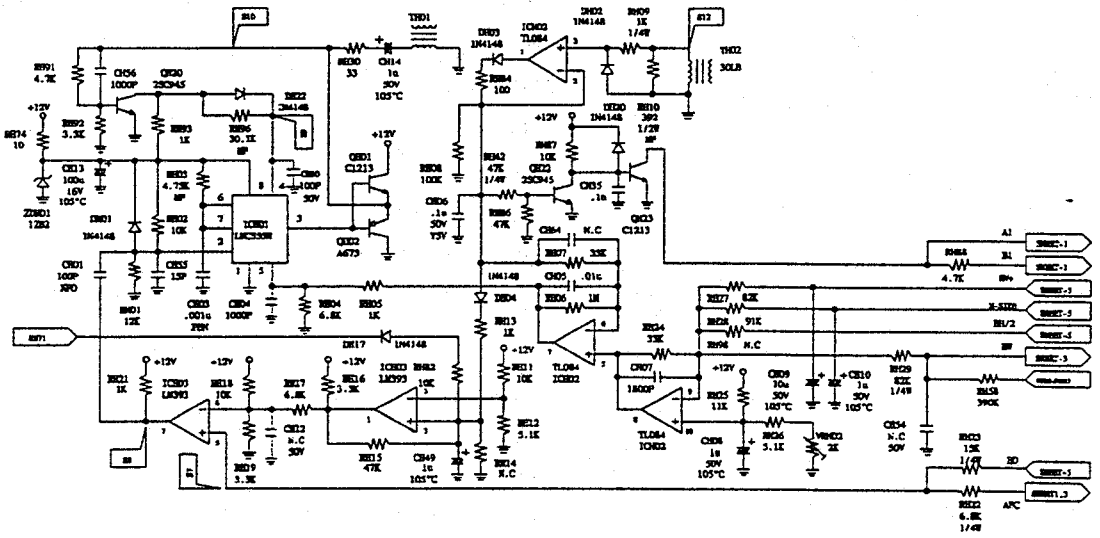
6.8. Horizontal Deflection B+ Control Circuit



6.8.1. ICH01 Trigger circuit:

ICH01 is via RH03 and CH03 to get RC oscillation. The frequency is decided by the trigger at pin2. The pin5 controls the duty width of output waveform. ICH01 Trigger CKT is mainly controlled by following:

6.8.1-a. Trigger composite circuit: Signal ***as figure S7*** is composition of HD via RH23 and AFC via RH22. HD is square waveform and AFC is pulse waveform.

6.8.1-b. Reference voltage waveform: ICH03 OP1 controls it.

6.8.1-c. Trigger output circuit: OP2 combines above two circuits.

6.8.2. Operating description:

6.8.2-a. During the power on instance, the horizontal deflection is not working, so the trigger composite circuit has only HD signal at pin5 of ICH03 OP2. In the same time, the ICH03 OP1 pin3 is controlled by DH17 and DH04 has no input because no horizontal deflection. The reference voltage is 3V at pin6 of ICH03 OP2. The reference voltage compares with pin5 and outputs the same waveform as HD signal.

6.8.2-b. The output of ICH03 is differential by CH01 and RH01, then inputs into pin2 of ICH01. DH15 controls pin5 of ICH01 and make the output duty width at pin3 of ICH03 expanded gradually and via TH01 to drive QH05. ***Refer to figure S10.***

6.8.2-c. After QH05's driven, the B^+ ***as figure S11*** is input to LH01 and the horizontal deflection starts operation.

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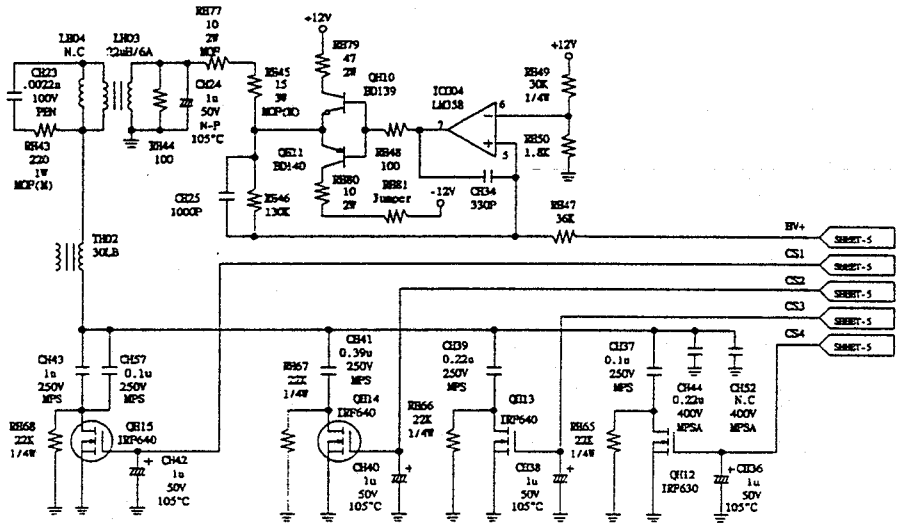
6.8.2-d. After horizontal deflection operation started, via TH02, ICH02 OP1 and DH04, ICH03 OP1 pin3 DC level will raise. When pin3 level is higher than 4 volts that a divided voltage by RH11 and RH12, CH03 OP1 pin1 level raises. In the same time, ICH03 pin6 level also raises. AFC is produced because of the horizontal deflection operation and ICH03 pin5 has the waveform ***as figure S7***. When reference voltage at ICH03 pin6 is higher than the highest level of HD in S7, ICH03's output waveform is converted to the square waveform as AFC. ***Refer to figure S8***

6.8.2-e. The horizontal deflection works steadily after above 1 to 3 steps are completed.

6.8.2-f. ICH01 LM555 is a mono stable oscillator. In high frequency, the trigger Duty becomes double trigger and makes the output frequency dropped when the trigger Duty is smaller than the output Duty width, thus there is no enough B^+ for horizontal deflection. In order to have enough B+ and precise output Duty in the high frequency, ICH03 pin7 is differential via CH56, RH91 and RH92 and triggers QH20 to control the output Duty at pin4 of ICH01. ***Refer to figure S9***

6.9. Horizontal Linearity Compensation Circuit

This circuit is designed to minimize the horizontal linearity variations in different horizontal frequency. There are two parts in this circuit:



6.9.1. Inductance compensation circuit:

The main component is LH03 (Linearity coil). The compensation circuit consists of ICG04 OP2, QH10, QH11 and LH03. HV+ is varied with horizontal frequency. ICG04 uses the divided voltage by RH49 and RH50 as a reference voltage. The reference voltage compares with HV+ to drive the Emitter follower QH10 and QH11 to improve the LH03 inductance.

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6.9.2. Capacitance compensation circuit:

CH52 and CH44 are Cs capacitors. QH12 controls CH37, QH13 controls CH39, QH14 controls CH41 and QH15 controls CH43. **ICC01 MC68HC705** pin14 (CS4), pin13(CS3), pin12(CS2) and pin11(CS1) controls QH12, QH13, QH14 and QH15 respectively. So, different frequency has different combination to meet the requirement.

For example: When frequency is 31KHz, ICC01 makes CS1~CS4 in high level. Thus, QH12~QH15's Drain-Source is on to make the Cs capacitance equal to CH52+CH44+CH37+CH39+CH41+CH43=0.047μF+0.22μF+0.082μF+0.22μF+0.47μF+1.2μF=2.239μF.

6.10. H-Size Pincushion Control CKT

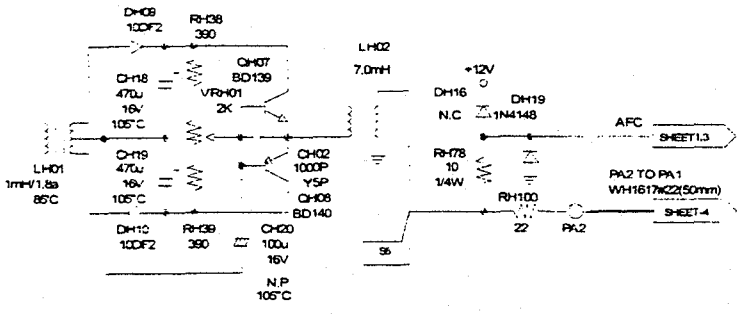
H-Size & Pincushion are used to control B+ that will change the horizontal deflection amplitude. To control B^+, the amplitude at ICH01 pin5 and the Duty width at ICH01 pin3 have to be changed. So ICH01 pin5 connects the control CKT that consists of ICH02 OP2, OP3. The feed back amplitude at pin6 and adjustment level at pin 5 will be compared in OP2. The comparison result will input into ICH01 pin5. OP3 will combine H-Size internal and external adjustments and East-West Correction.

6.10.1. VRH02 is mainly to preset the H-Size of each mode, and ICC01 pin3 is to change each specified mode.

6.10.2. In the Pincushion control, a parabolic waveform ***as figure S16*** is from pin31 EWOUT of ICB01 TDA9106 and into ICH02 OP3 to create a output parabolic waveform. ***as figure S17***

6.11. H-Center Control Circuit

H-Center is designed to adjust the Raster's center position by using the secondary current of LH01. This current is rectified through DH09, CH18, DH10 and CH19 and to generate a DC current that will through the adjustment of RH38, VRH01 and RH39. Finally, the current is through the emitter follower, QH07 and QH08, and into LH02 to increase and decrease the horizontal deflection current.



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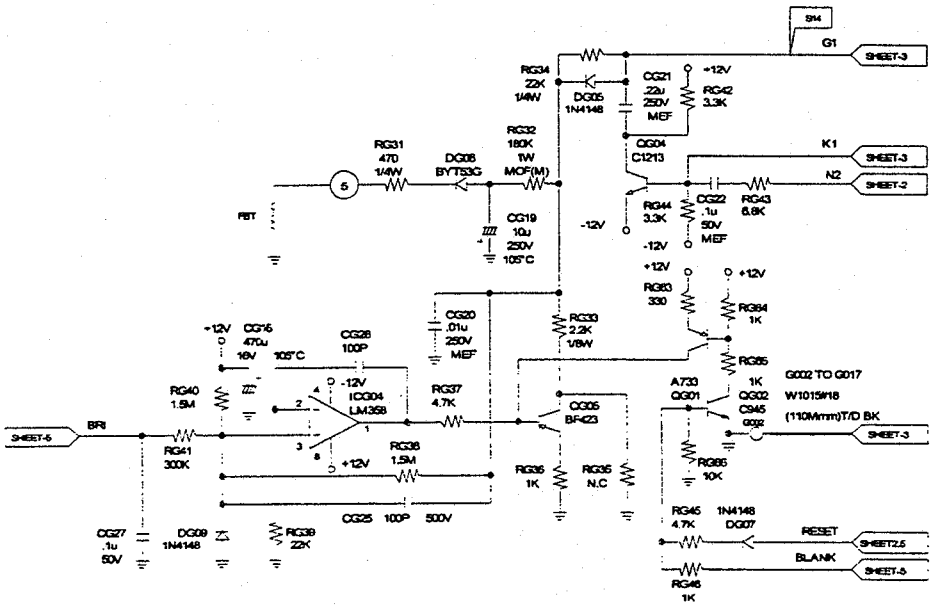
6.12. Brightness Blanking Reset Control CKT

Change the Brightness level by controlling the G1.



6.12.1. In normal working condition, the G1 waveform is synchronized with the vertical sync waveform ***as figure S14***. Since the purpose is to blank the vertical flyback scanning line when vertical is flyback, so the N2 vertical deflection waveform through RG43, CG22, RG44, QG04 is used to control it.

6.12.2. Brightness control is via the control at pin38 (PWM5) of ICC01 (MC68HC705) pin38 and through the control at ICG04(LM358) OP1 and QG05 to control the DC level of G1.

6.12.3. When frequency is changed, the pin33 (PC6) Blank of ICC01 will output a high level to RG46 to make both QG02 and QG01 on. In the same time, 12V is via RG63, QG01 E-C pole to input the base of QG05, thus QG05 off and to get G1 voltage -180V and to blank the screen. After the frequency changed, the pin33 of ICC01 will output a low Level to make QG02 and QG01 OFF. In the same time, QG05 is not controlled by the pin33 of ICC01 and the Brightness control works normally.

6.12.4. When mode changes from power on to suspend, ICC01 pin22 RESET will output a high level to make QG02 and QG03 on. QG05 base has positive signal to make QG05 off, to get G1 -180V and to blank the screen.

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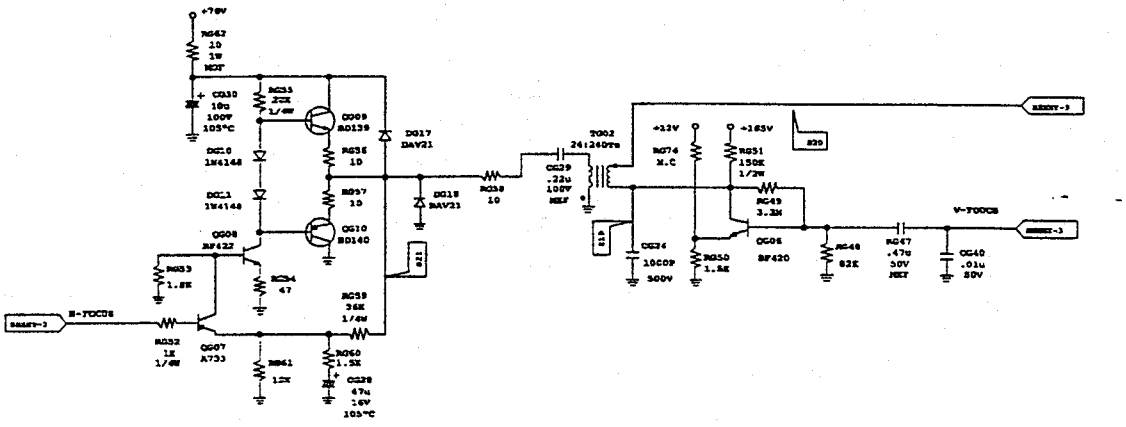
6.13. Focus CKT



Dynamic Focus is used to get perfect focusing of each dot on the screen.

6.13.1. There are H-Focus and V-Focus:

6.13.1-a. H-Focus ***as figure S21***: ICB01 pin17(HF) outputs a parabolic waveform and through RG52 and QG07 into QG08 to get a reverse amplified waveform. This waveform is via the emitter follower, QG09 and QG10, as a current gain then input into TG02.

6.13.1-b. V-Focus ***as figure S18***: ICB01 pin32(VF) outputs a parabolic waveform. This Waveform is amplified by QG06 and input into TG02.

6.13.1-c. H-Focus and V-Focus are into TG02 to get a combined output waveform that will input to FBT pin9.

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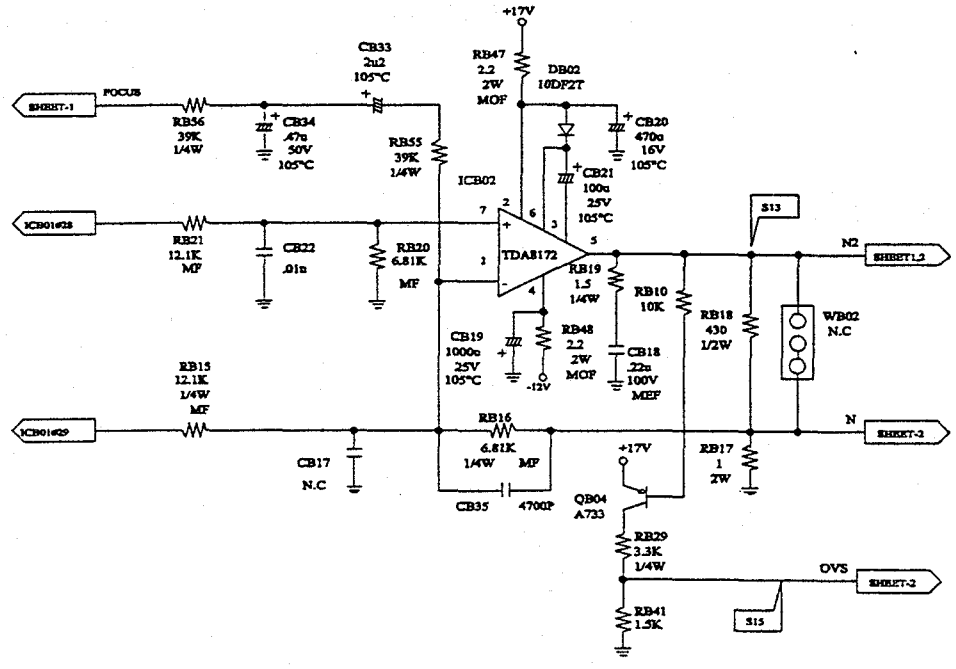
6.14. Vertical Deflection CKT



6.14.1. Vertical deflection Saw-tooth waveform is provided by ICB01 pin29 (VOUT) and amplified by TDA8172.

6.14.2. A voltage multiplier, connected to pin3 and pin6, consists of DB02, CB20 and CB21 is designed to avoid flyback scanning line appeared during the vertical flyback period.

6.14.3. ICB01 pin28 (VDC) provides a DC level to CB02 as a V-Position control voltage. As long as pin28 DC level changed, V-Position is also changed.

6.14.4. Vertical Deflection Wave ***as figure S13***

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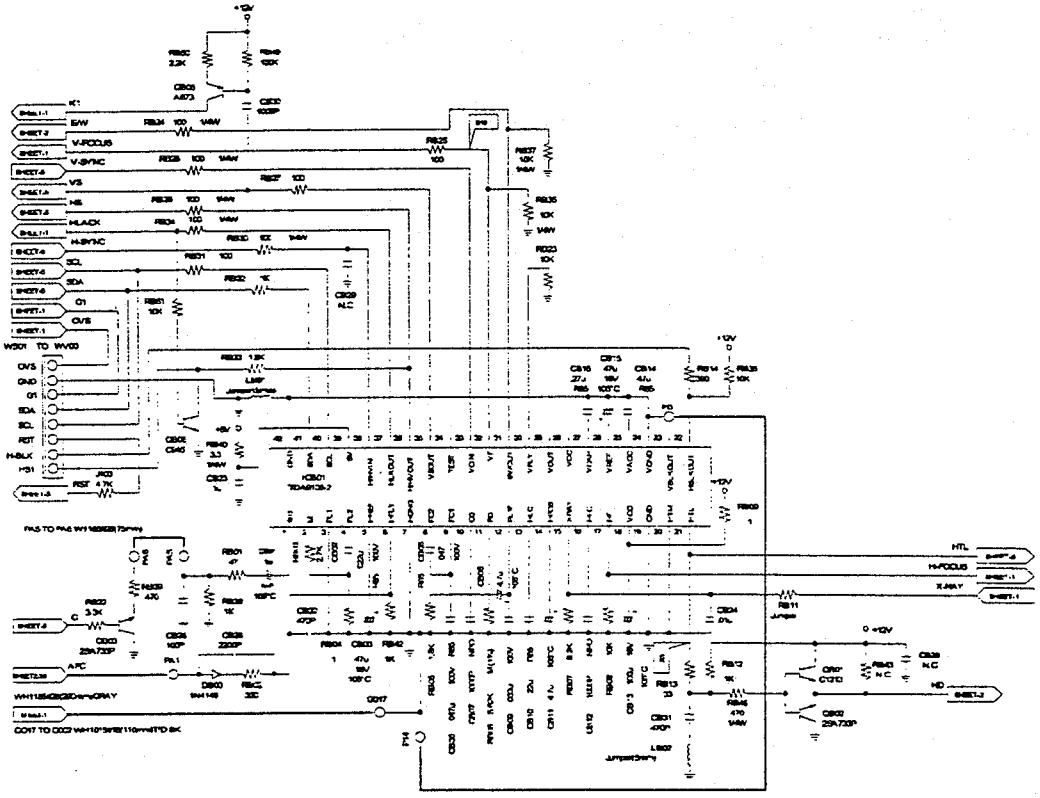
6.15. TDA9106 Circuit

The ICB01 (TDA9106) acts as a key component processing small signals for deflection circuits. The functions of TDA9106 include:



6.15.1. Synchro Processor

6.15.1-a. Capability to accept separate H/V(Pin 38, Pin 33), composite H+V(Pin 38), sync-on-green (Pin 1) syncs which could be selected by MCU via I2C control(Pin 40,41).

6.15.1-b. Separate H/V sync outputs (Pin 36, Pin 35) of TTL level for MCU to count input frequencies.

6.15.1-c. Status register with sync polarity, existence, locking states could be read by MCU via I2C.

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6.15.2. Horizontal part:

6.15.2-a. Wide self-locking range with 25 to 97KHz of PLL1 to lock the HD frequency to H-sync input. The values of RB06(Pin 11) and CB07(Pin 10) decides the freerun frequency(25KHz)

6.15.2-b. The H-phase control by MCU via I2C is also done at the PLL1 stage.

6.15.2-c. The PLL2 (Pin 4) locks the horizontal deflection via AFC (Pin 6) and provides the functions of dynamic phase controls(Pin-Balance and Parallelogram, internal) and moire (Pin 2) control by MCU via I2C.

6.15.2-d. The I2C controlled H-Focus of Amplitude and Phase (keystone) is output on Pin 17 and amplified to compensate the horizontal dynamic focus.

6.15.3. Vertical part:

6.15.3-a. Vertical ramp with internal I2C controlled S and C linear compensation is output on Pin 29 to ICB02 (TDA8172) to controll the vertical deflection.

6.15.3-b. The DC voltage of the V-ramp is output on Pin 28 to ICB02 to be the reference voltage of the amplifier.

6.15.3-c. Vertical parabola generator with I2C controlled amplitude, keystone, S-curve and cupid-bow output on Pin 31 to the horizontal deflection CKT to compensate the pincushion-like distortion.

6.15.3-d. V-Focus output on Pin32 to be amplified to compensate the vertical dynamic focus.

6.15.3-e. Internal geometry tracking with V-Pos and V-Amp.

6.15.4. Others

6.15.4-a. H/V blank output on Pin 22,23

6.15.4-b. H lock status on pin 37 to protect H deflection CKT.

6.15.4-c. X-ray protection input on Pin 15.

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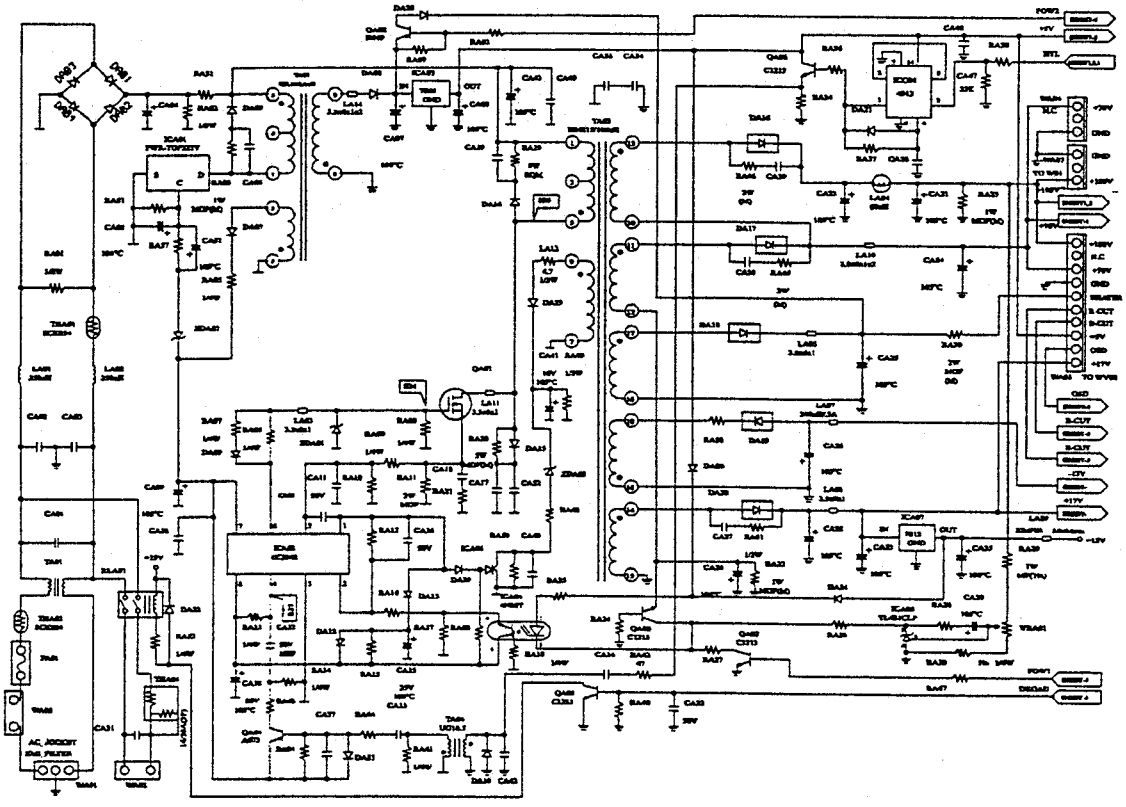
6.16. Power Supply Operation Theory



ICA01 and ICA02 consist of a Current Mode Switch Power Supply and provides +180V, +70V, +5V, +17V, -12V and Heater voltage.

6.16.1-a. ICA01 and TA02 are auxiliary power source. ICA01 consists of PWM and Power MOS with an internal oscillate frequency 100KHz and combines with TA02 to provide +5V output. The +17V is through TA02 pin2 and rectified by DA07 to provide ICA02 working voltage and is fed back through ZDA02 into pin C to get a stable output voltage.

6.16.1-b. ICA02, QA01 and TA03 are main power source. ICA02 uses PWM to drive QA01 and TA03 to generate each output voltage. The output voltage is fed back via +180V to ICA05 TL431, then coupled to ICA02 pin 2 via ICA04 4N35 to make +180V stable. TA04 and QA04 accepts AFC signal to make Power Supply's working frequency synchronized with the horizontal frequency.

6.16.1-c. ZDA03 and ICA06 consist of the over-voltage protection circuit. ICC04's over-voltage protection and QA05, CA20 and RA22 consist of current-limited protection circuit.

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6.16.1-d. When output voltage is much higher than normal value or the feed back voltage is abnormal, in order to get protection, the output at pin9 of TA03 raises to the level that ZDA03 is on to trigger ICA06 SCR that makes ICA02 pin1 grounded. In the same time, if the output voltage at pin7 of ICC04 raises higher than 3.5V or a Power Saving signal inputs to make QA02 on, the voltage will dropped via ICA04 to control ICA02. If the output is shortage or the output loading is abnormal, a current will flow through RA22 to generate a voltage drop to make QA05 on and turn off the output via the control of ICA04 and ICA02.

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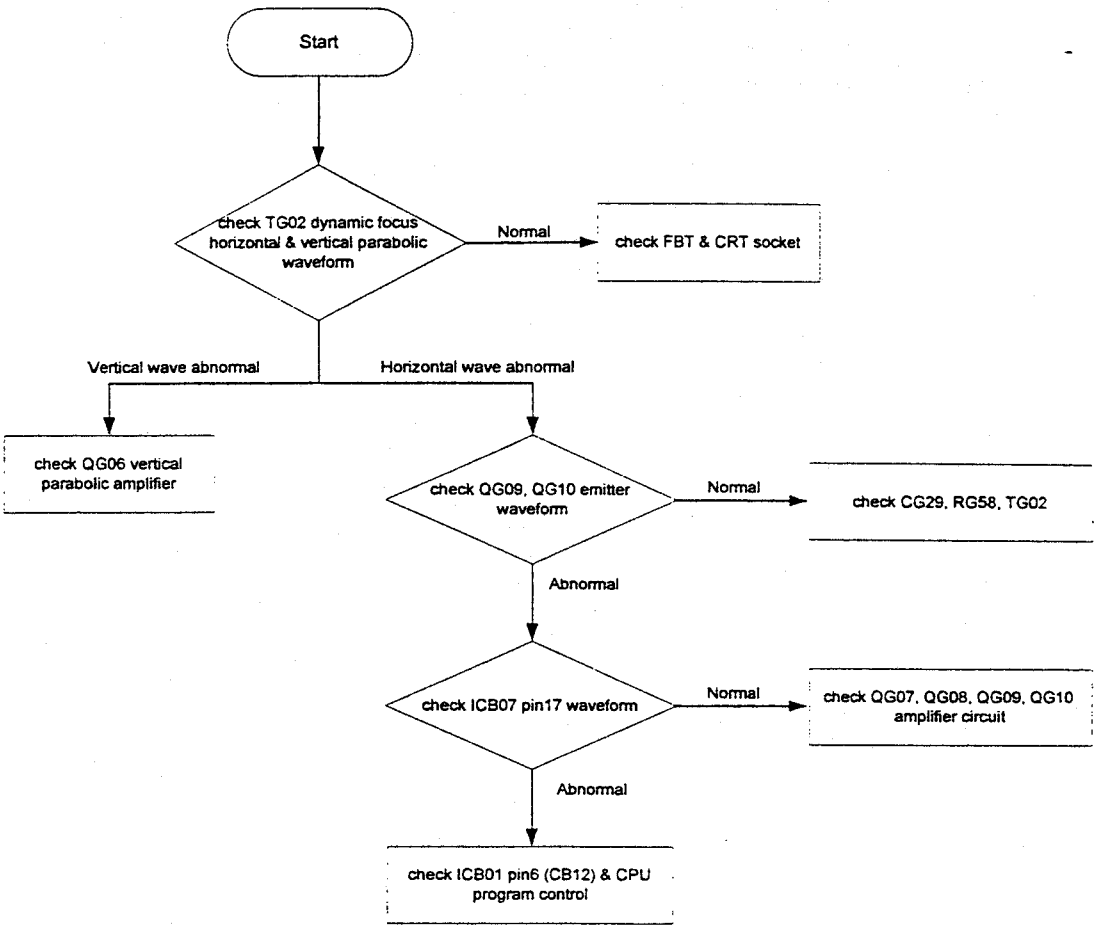
Chapter 7 Trouble Shooting

7.1. Dynamic Focus Does Not Work



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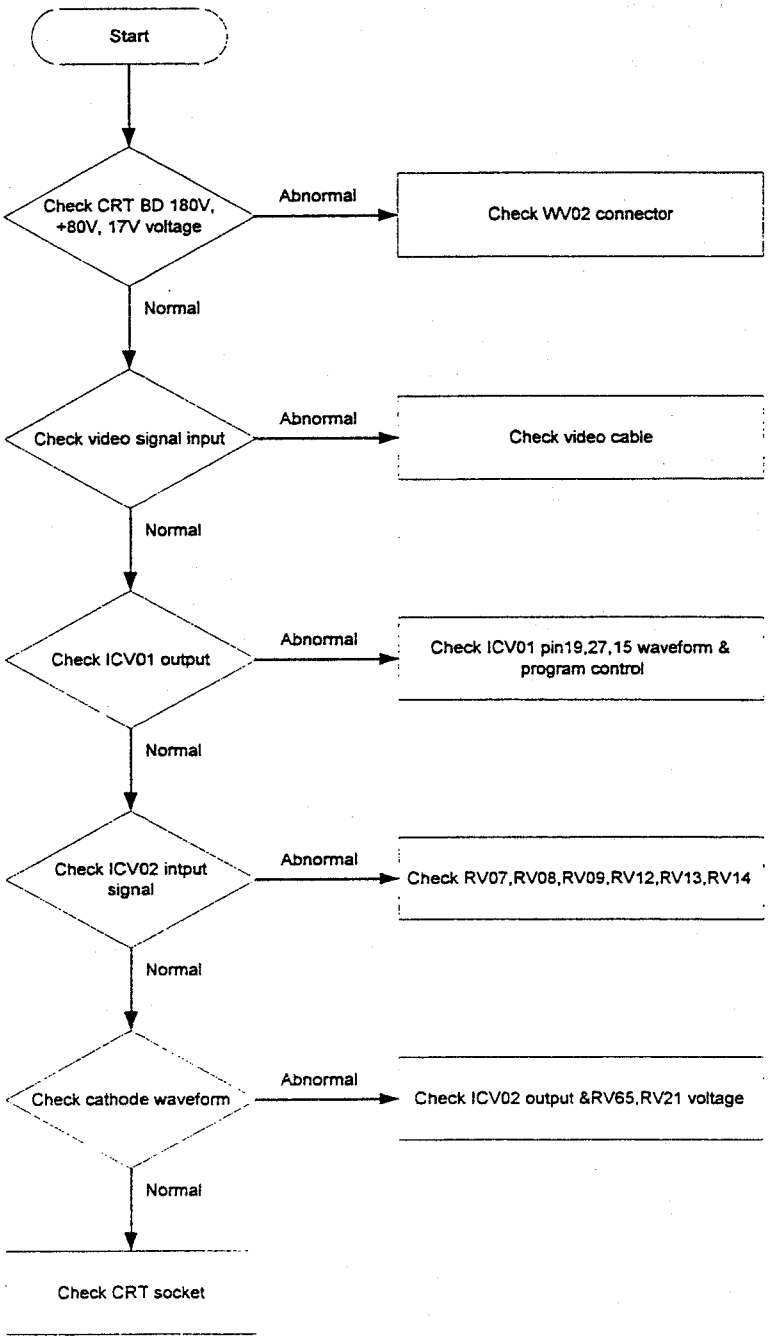
7.2. Video Does Not Appear



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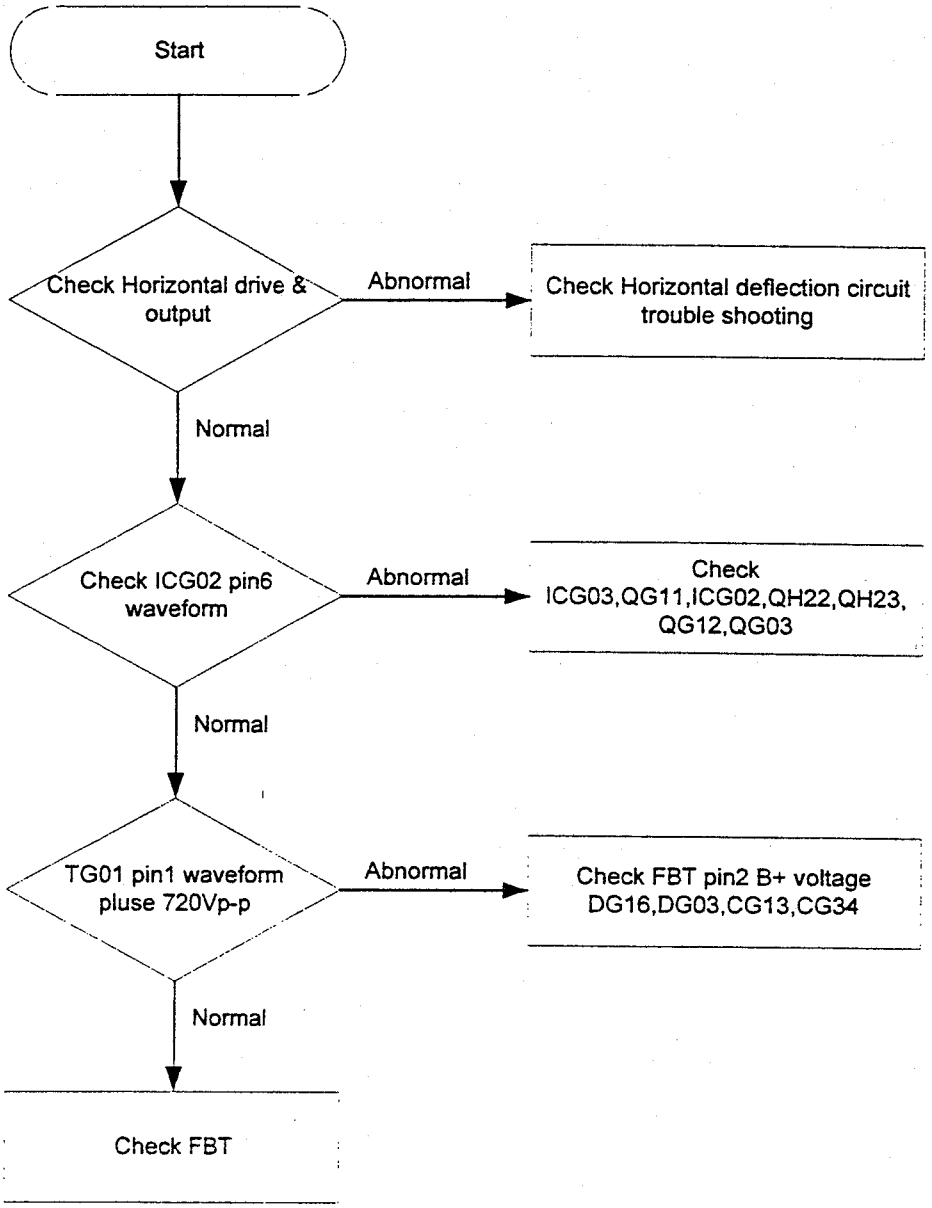
7.3. High Voltage Does Not Work



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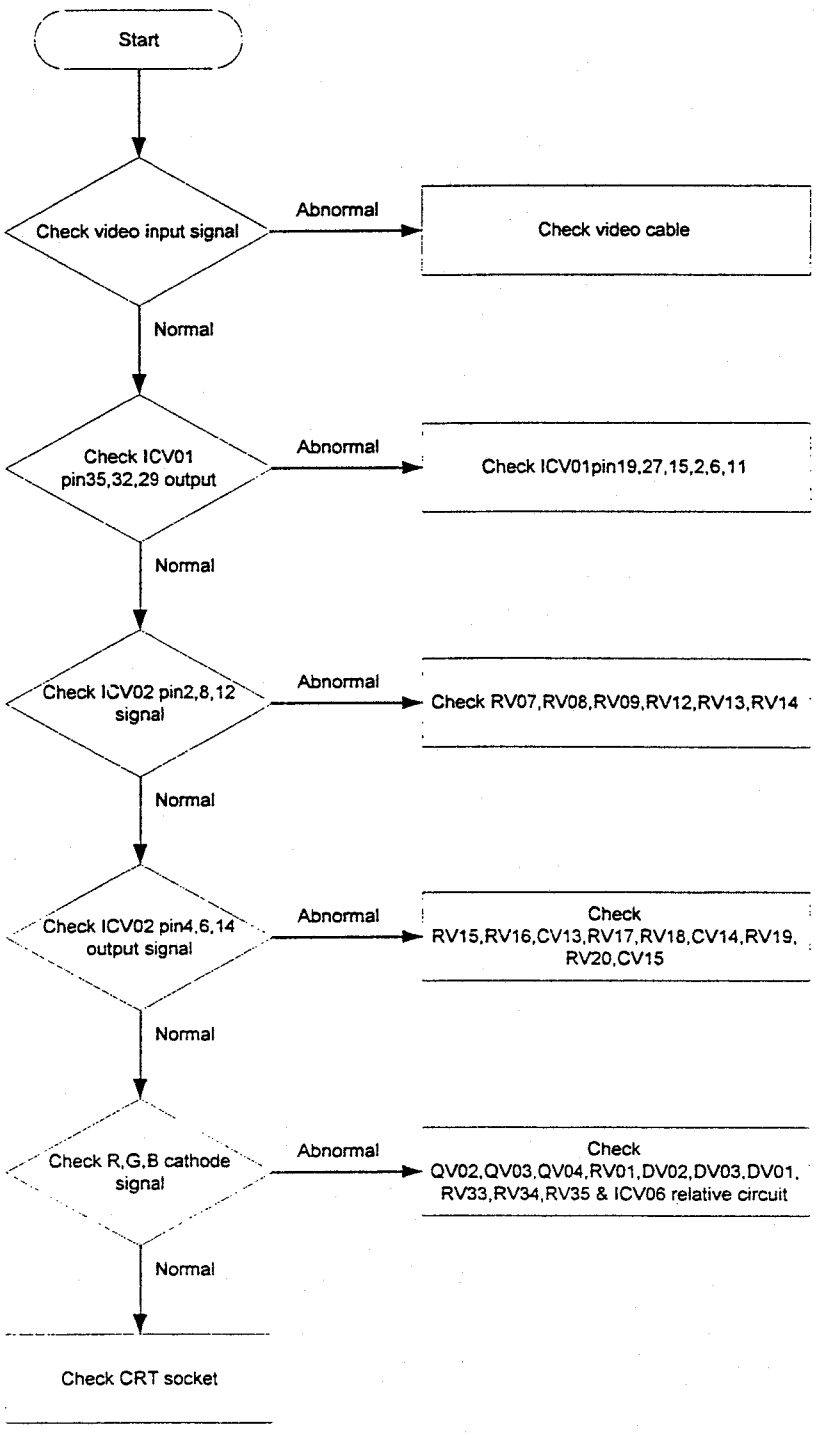
7.4. Video No R, G, B Color



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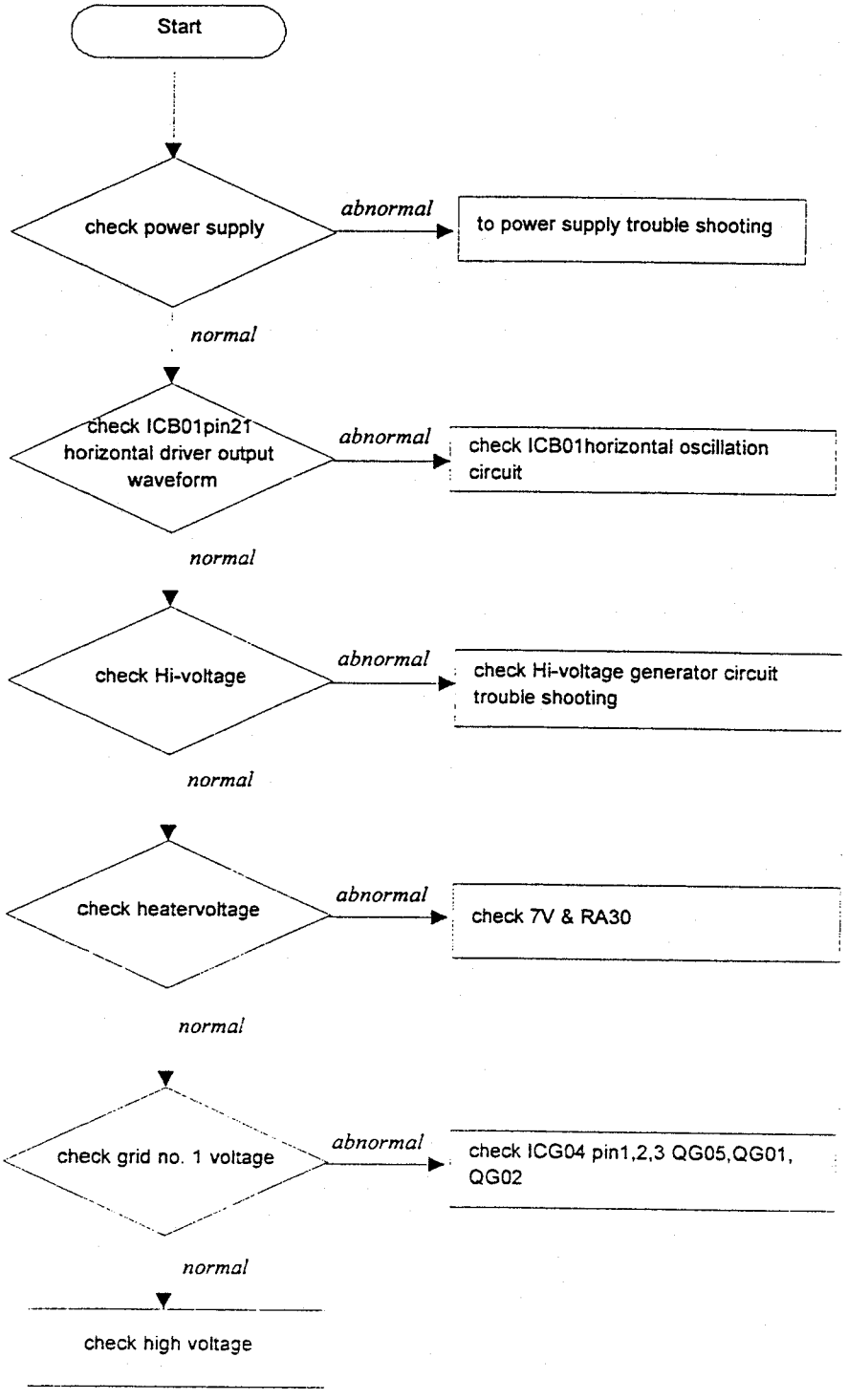
7.5. Raster Does Not Appear



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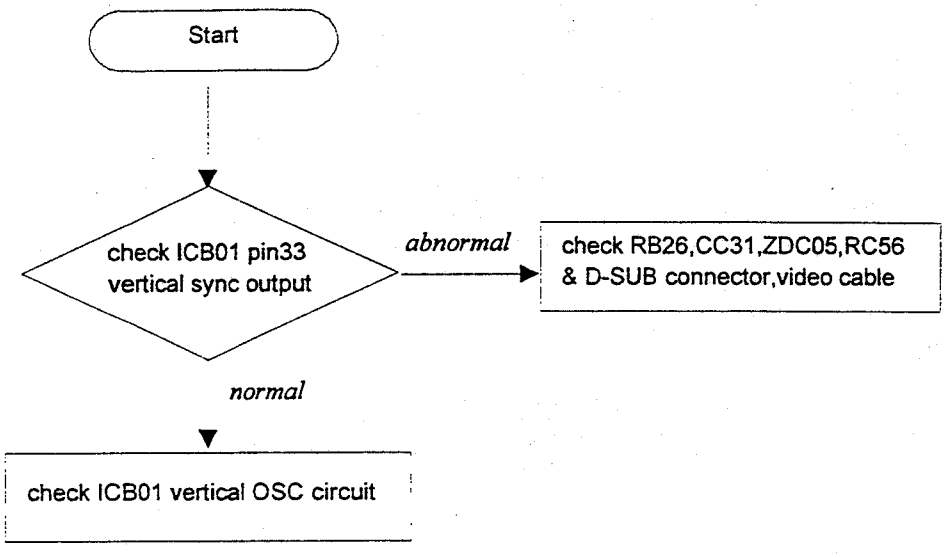
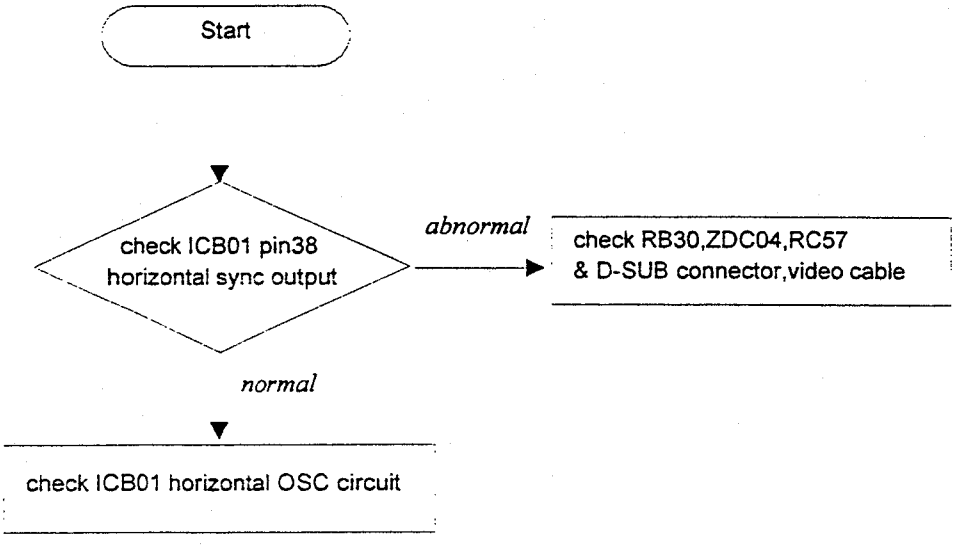
7.6. Vertical Not Synchronous



7.7. Horizontal Does not Synchronous



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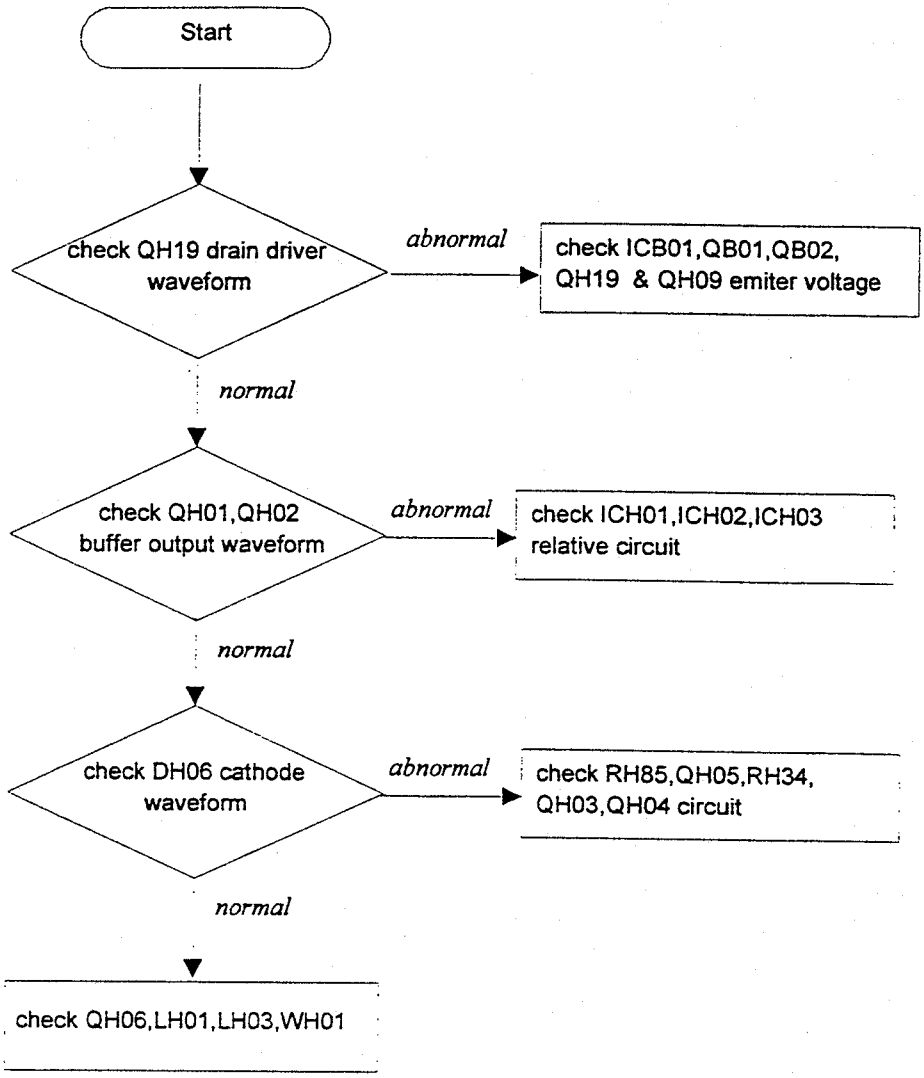
7.8. Horizontal Deflection Does Not Work



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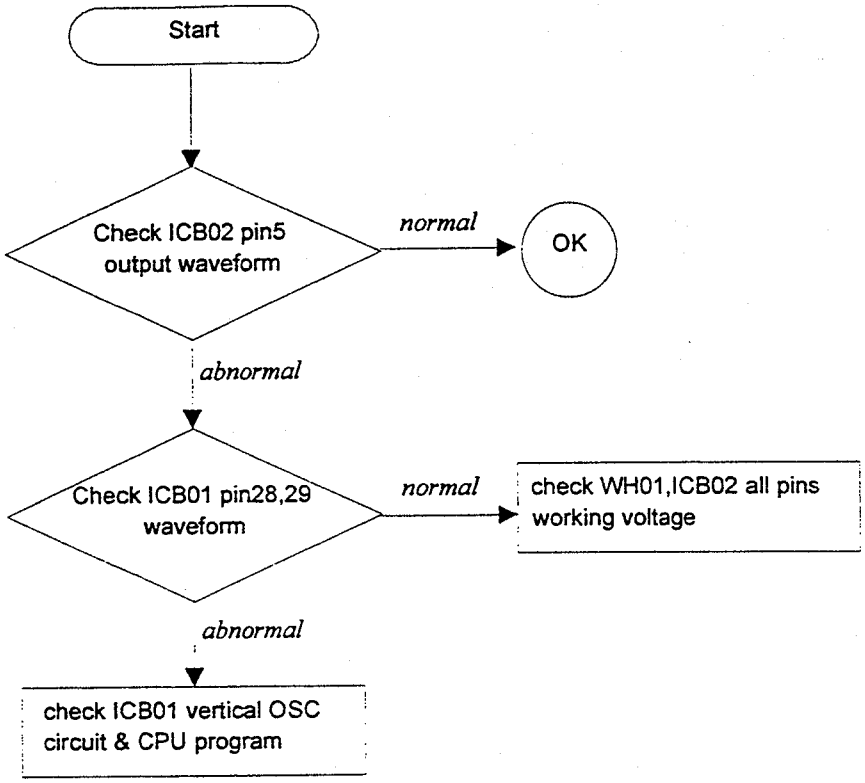
7.9. Single Horizontal Line



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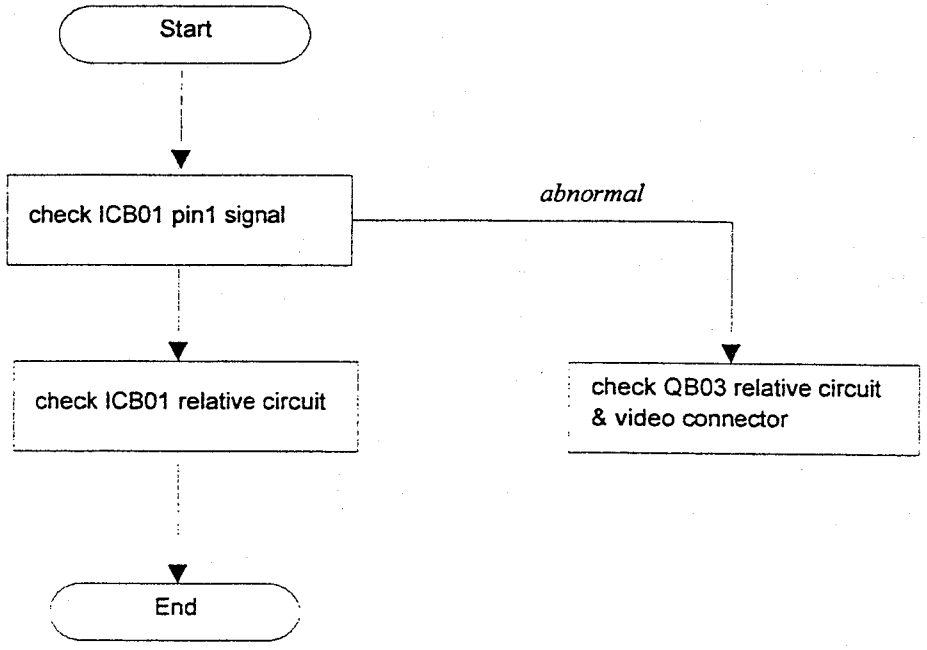
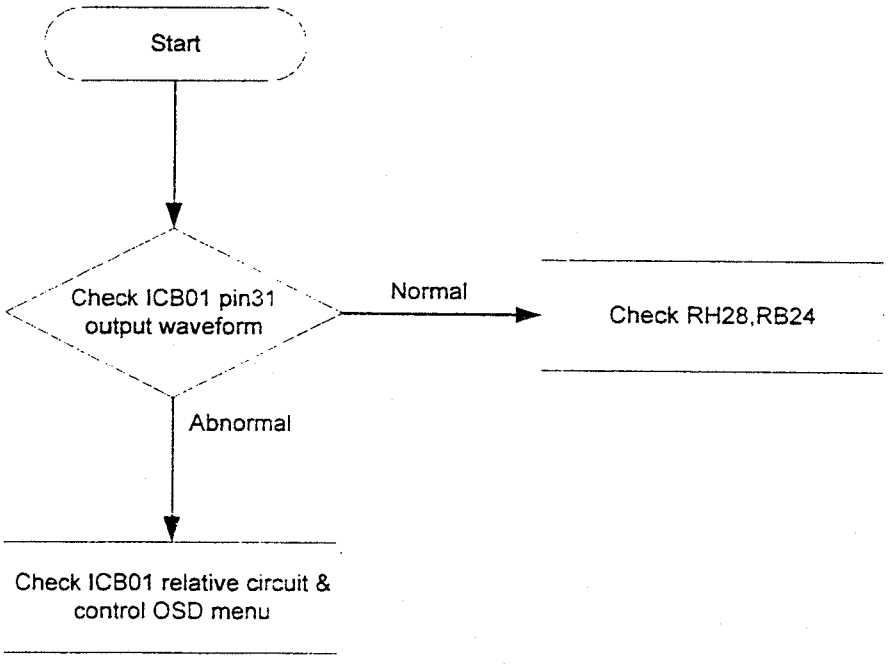
7.10. Sync On Green Does Not Work



7.11. Pincushion & Distottion



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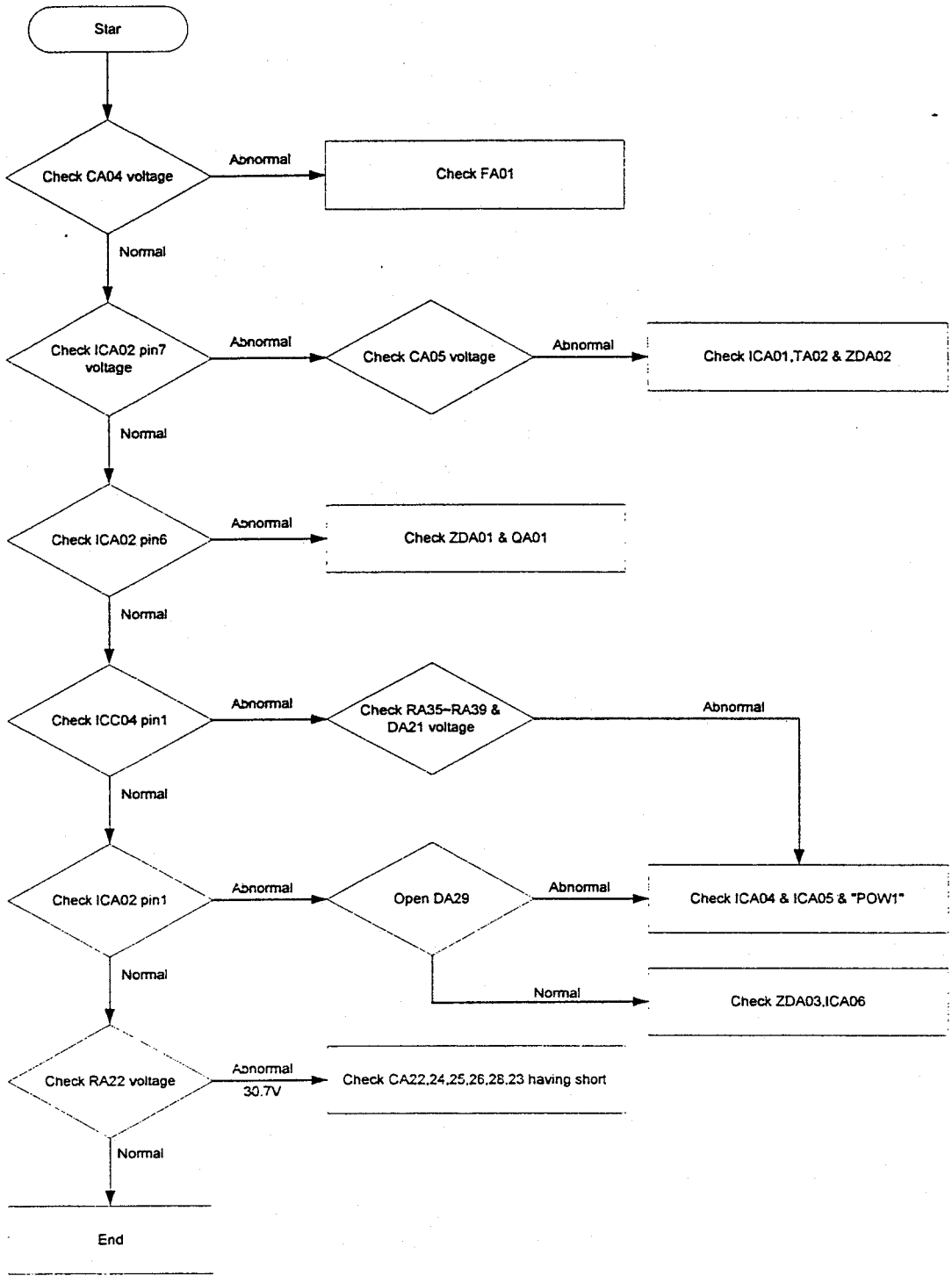
7.12. No Voltage Output



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Chapter 8 Alignment Process

8.1. Factory Adjustment Procedure

Input timing: 1024x768 (H=60K,V=75Hz)
Pattern: Cross-Hatch

8.1.1. Turn ON the monitor with the '2' key keeping pressed for more than 2 seconds to enter the Preset-Adjust mode. (There should be an 'P' at the right-bottom corner of the On- Screen-Display).

8.1.2. Use the "Memory Recall" in the ViewMatch to make sure the control data is factory preset. (If the "Preset-Adjust" has been done before, The E^2PROM Initial procedure* must be executed

8.1.3. Touch Heat Sink of DA16 and adjust VRA01 to make Voltage = 180±0.5V

8.1.4. Adjust VRG01 to make CRT High-Voltage = 26.5KV

8.1.5. Adjust VRH02 to make H-Size just full-scan under MAC 640x480 @67Hz with "H-SIZE" Max (100).

8.1.6. Adjust VRH01 to make H-Center (raster) ±3mm

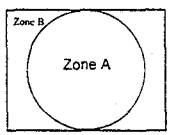
8.1.7. Short WG01 to make X-Ray Protection and Restart the monitor in Preset-Adjust mode

8.1.8. Use the ViewMatch Controls to adjust the "H-POSITION" ,"V-SIZE", "V-POSITION", "PINCUSHION", "TRAPEZOID", "PARALLEL", "P-BALANCE", "TILT" ,"VLINR-SYM", "VLINR-CENTER" , "CUPID BOW" , "HOURGLASS" to meet the Spec. :

- H-Size: 353± 1mm
- H-Position: ± 1mm
- V-Size: 265 ± 1mm
- V-Position: ± 1mm
- Pincushion: ≤ 1mm
- Trapezoid : ≤ 1mm
- Parallel : ≤ 1mm
- P-Balance : ≤ 1mm
- Tilt: ≤ 1mm

8.1.9. Jitter - Not allowed (Viewed at 45 cm)

8.1.10. Misconvergence -Zone A: 0.25mm; Zone B: 0.35mm



353x265mm

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8.2. Factory Preset Data Adjustment Procedure

Input timing: see attached
Pattern: Cross-Hatch

8.2.1. Turn ON the monitor with the '2' key keeping pressed for more than 2 seconds to enter the Preset-Adjust mode. (There should be an 'P' at the right-bottom corner of the On-Screen-Display).

8.2.2. For each timing list on attached table (except primary one <1024x768 H60K, V75Hz>), use the ViewMatch Controls to adjust the "H-SIZE", "H-POSITION"(VIDEO), "V-SIZE", "V-POSITION", "PINCUSHION", "TRAPEZOID", "PARALLEL", "P-BALANCE", to meet the Spec. :

- H-Size: 353± 1mm
- H-Position: ± 1mm
- V-Size: 265 ± 1mm
- V-Position: ± 1mm
- Pincushion: ≤ 1mm
- Trapezoid: ≤ 1mm
- Parallel: ≤ 1mm
- P-Balance: ≤ 1mm
- "CONTRAST" and "BRIGHTNESS" should be preset to "100" and "50" respectively for each timing.

8.3. Color Adjustment Procedure

Input timing: 1024 x 768 (H=60K,V=75Hz)
Pattern: Center Block/Full White

8.3.1. Turn ON the monitor with the '2' key keeping pressed for more than 2 seconds to enter the Preset-Adjust mode. (There should be an 'P' at the right-bottom corner of the On-Screen-Display).

8.3.2. Cut Off Adjust:

8.3.2-a. use the ViewMatch Controls to adjust the "CONTRAST" to min.(00), "BRIGHTNESS" to max.(100)

8.3.2-b. use the ViewMatch Controls to adjust the "SubBri" to max.(100)

8.3.2-c. enter the "ViewMatch Color" submenu of the ViewMatch Control

8.3.2-d. select the CUTOFF and enter the color adjust menu

8.3.2-e. preset the R,G,B to 50

8.3.2-f. adjust the R, B to obtain color temperature X=0.283±0.010,Y=0.298±0.010

8.3.2-g. adjust G2 voltage to obtain raster brightness about ≤0.5FL

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8.3.3. Color Temperature Adjust:

8.3.3-a. use the ViewMatch Controls to adjust the "BRIGHTNESS" to 50, then the "CONTRAST" to 100.

8.3.3-b. toggle the color temp." to 9300°K

8.3.3-c. preset the R,G,B to (95)

8.3.3-d. adjust the R,G,B to obtain color temperature X=0.283±0.010,Y=0.298±0.010

8.3.3-e. repeat step b,c,d to adjust color temp. 6500K (X=0.313±0.015,Y=0.329±0.015) and 5500K (X=0.332±0.015,Y=0.348±0.015)

8.3.4. White Luminance Adjust

8.3.4-a. Center Block White Luminance:

- Use the ViewMatch to adjust the "ABL" to Max(100), "CONTRAST" to100, "BRIGHTNESS" to 50.
- adjust the "Sub contrast" to make the center block 47±3 FL

8.3.4-b. Full While Luminance:

- enter the Preset Adjust mode and adjust the "CONTRAST" to max(100) , and "BRIGHTNESS" to 50.
- toggle the color temp. to 9300°K
- adjust "ABL" to obtain luminance output 32±2FL in the full white pattern full white pattern

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Chapter 9 Spare Parts List

ITEM	LOCATION	PART NO.	DESCRIPTION	REMARK
1	CH22	0121-7392-9132	P/C R76 3900PF 1.6KV J B	
2	DA16	0390-3001-4022	FAST DIODE FUF5407 T	
3	DA17	0390-3001-4022	FAST DIODE FUF5407 T	
4	DG03	0390-3004-8022	FAST DIODE FUF5408 T	
5	DG18	0390-5000-9132	GEN. DIODE BAV21 T	
6	DH08	0390-2000-2180	Damper DIODE FMP-G5FS N-F	
7	FA01	0180-4402-5201	FUSE T-L 250V 4A 5*20mm	
8	ICA01	0430-4004-0230	IC TOP221Y TO-220 3PIN	
9	ICA02	0430-7000-3107	IC UC3842 DIP 8PIN	
10	ICA04	0430-7000-1110	IC 4N35 DIP 6PIN	
11	ICA05	0430-6000-4310	IC TL431CLP TO-92 3PIN	
12	ICB01	0430-4004-1407	IC TDA9106-2 SDIP 42PIN	
13	ICB02	0430-4001-7107	IC TDA8172 DIP 7PIN	
14	ICC01	0430-5001-2110	IC MC68HC705BD7 DIP 40PIN	
15	ICG02	0430-7000-7107	IC UC3843 DIP 8PIN	
16	ICV01	0430-4004-9402	IC M52743BSP SDIP 36PIN	
17	ICV02	0430-4004-3114	IC VPS16 DIP 15PIN	
18	ICV05	0430-7001-2126	IC CD0018AD DIP 16PIN	
19	LG03	0370-0000-1010	FERRITE CORE RH 3.5x6x1Wx2	
20	QA01	0420-1001-2501	POWER MOS IRFPE50 TO-3P	
21	QG03	0420-1000-5509	POWER MOS 2SK2485 TO-3P	
22	QG05	0410-4000-4111	TRANSISTOR BF423 TO-92 T	
23	QG06	0410-4000-1111	TRANSISTOR BF420 TO-92 T	
24	QG09	0410-6000-1311	TRANSISTOR BD139 TO-126	
25	QG10	0410-6000-2311	TRANSISTOR BD140 TO-126	
26	QH05	0420-1000-1401	POWER MOS IRF630 TO-220	
27	QH06	0410-2001-0511	TRANSISTOR BU2532AL TO-3P	
28	QH15	0420-1000-2407	POWER MOS IRF640 TO-220	
29	RG22	0132-1509-0252	RES. MOF 15ohm 2W J A-FK	
30	RH85	0132-1509-0254	RES. MOF 15ohm 2W J R-K	
31	RLA01	0252-1250-2012	RELAY 2POLES 250V/5A/12Vdc ST	
32	TG01	0480-0000-0050	F.B.T. 26KV 3000PF(CF1043B)	
33	WA01	0262-0000-0012	AC SOCKET 0714C PCB TYPE	

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Chapter 10 Critical Parts List

ITEM	LOACTION	PART NO	DESCRIPTION	REMARK
1		0210-0190-0155	CRT 19" M46LPE21X11 MIT.	
2	ASCH05	0330-1900-0120	DEGAUSSING 19" 24ohm 0.45x90Ts	
3	CA01	0122-0474-2702	P/C X2 0.47uF 275V K B	
4	CA02	0122-1222-2522	D/C Y 2200PF 250V M N-F	
5	CA03	0122-1222-2522	D/C Y 2200PF 250V M N-F	
6	CA04	0101-1331-4003	E/C GEN. 330uF 400V 85' S	
7	CA31	0122-0103-2702	P/C X2 0.01uF 275V K B	
8	CA33	0122-1472-2522	D/C Y 4700PF 250V M N-F	
9	CA34	0122-1472-2522	D/C Y 4700PF 250V M N-F	
10	FA01	0180-4402-5201	FUSE T-L 250V 4A 5x20 GLASS	
11	ICA04	0430-7000-1110	IC 4N35 DIP 6PIN	
12	LA01	0360-1000-0010	RING CORE L:250uH 4A	
13	LA02	0360-1000-0010	RING CORE L:250uH 4A	
14	QA01	0420-1001-2501	POWER MOS IRFPE50 TO -3P	
15	RA01	0130-1004-1250	RES. CF 1.0Mohm 1/2W J A	
16	RLA01	0252-1250-2012	RELAY 2POLES 250V/5A/12Vdc DT	
17	TA02	0350-0419-0030	X'FMR EEL19 5.5mH AT1099DA	
18	TA03	0350-0242-0060	X'FMR EE4215 105uH	
19	TA04	0353-0600-0010	X'FMR SYNC UU 10.5 1.75-1.75mH	
20	TG01	0480-0000-0050	F.B.T. 26KV 3000PF (CF1043B)	
21	WA01	0262-0000-0012	AC SOCKET 0714C PCB TYPE	
22	WA02	0451-1000-0294	WAFER 10mm 2P WHITE	

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Chapter 11 Parts List

11.1. 3019-0012-0159 OPTION BD

ITEM	LOC.	PART NO.	DESCRIPTION	REMARK
1	CX01	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
2	CX02	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
3	CX03	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
4	CX04	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
5	CX05	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
6	CX06	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
7	CX07	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
8	CX08	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
9	CX09	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
10	CX10	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
11	CX11	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
12	CX12	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
13	CX13	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
14	ICX01	0430-4005-5109	IC TDA8444P/N4 DIP 16PIN	
15	PCB8	0174-1640-0030	PCB OPTION BD K1 55x80x1.6t AT1099DA	
16	QX01	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
17	QX02	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
18	QX03	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
19	QX04	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
20	QX05	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
21	QX06	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
22	QX07	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
23	QX08	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
24	QX09	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
25	QX10	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
26	QX11	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
27	QX12	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
28	QX13	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
29	QX14	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
30	QX15	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
31	QX16	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
32	RX01	0130-1000-1850	RES. CF 100ohm 1/8W J A	
33	RX02	0130-1000-1850	RES. CF 100ohm 1/8W J A	
34	RX03	0130-4700-1850	RES. CF 470ohm 1/8W J A	
35	RX04	0130-4700-1850	RES. CF 470ohm 1/8W J A	
36	RX05	0130-2709-1450	RES. CF 27ohm 1/4W J A	
37	RX06	0130-2709-1450	RES. CF 27ohm 1/4W J A	
38	RX07	0130-4700-1850	RES. CF 470ohm 1/8W J A	
39	RX08	0130-4700-1850	RES. CF 470ohm 1/8W J A	
40	RX09	0130-2709-1450	RES. CF 27ohm 1/4W J A	
41	RX10	0130-2709-1450	RES. CF 27ohm 1/4W J A	
42	RX11	0130-4700-1850	RES. CF 470ohm 1/8W J A	
43	RX12	0130-4700-1850	RES. CF 470ohm 1/8W J A	
44	RX13	0130-2709-1450	RES. CF 27ohm 1/4W J A	
45	RX14	0130-2709-1450	RES. CF 27ohm 1/4W J A	
46	RX15	0130-4700-1850	RES. CF 470ohm 1/8W J A	
47	RX16	0130-4700-1850	RES. CF 470ohm 1/8W J A	
48	RX17	0130-2709-1450	RES. CF 27ohm 1/4W J A	
49	RX18	0130-2709-1450	RES. CF 27ohm 1/4W J A	
50	WX01	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
51	WX02	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
52	WX03	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
53	WX04	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
54	WX05	0451-2500-0444	WAFER 2.50mm 4P 90' Kink	

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11.2. 3019-0022-0156 DISPLAY BD

ITEM	LOC.	PART NO.	DESCRIPTION	REMARK
1	DD01	0390-5000-1052	GEN. DIODE 1N4148 T	
2	LED01	0440-5000-0020	LED L-59GYW 5	
3	LEDD01	1701-1500-0100	LED HOLDER 3PIN/LED 4x3A	
4	PCB5	0170-1740-0700	PCB DISPLAY BD VO 118x38.5x1.6t / P795	
5	RD01	0130-3300-1850	RES. CF 330ohm 1/8W J A	
6	RD02	0130-3300-1850	RES. CF 330ohm 1/8W J A	
7	RD03	0130-2402-1450	RES. CF 24Kohm 1/4W J A	
8	RD04	0130-5102-1450	RES. CF 51Kohm 1/4W J A	
9	SWD01	0220-7020-0167	SW TACTILE 6*6mm 4P	
10	SWD02	0220-7020-0167	SW TACTILE 6*6mm 4P	
11	SWD03	0220-7020-0167	SW TACTILE 6*6mm 4P	
12	SWD04	0220-7020-0167	SW TACTILE 6*6mm 4P	
13	WD01	0460-1106-0050	WH XH6P-JAM6P 1007#24 350mm	

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11.3. 3019-0132-0151 VIDEO BD

ITEM	LOCATION	PART NO	DESCRIPTION	REMARK
1	CV01	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
2	CV02	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
3	CV03	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
4	CV04	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
5	CV05	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
6	CV06	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
7	CV07	0101-1221-1211	E/C GEN. 220uF 16V 105' F	
8	CV12	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
9	CV13	0111-3470-5105	C/M Multi 47PF 50V NPO 0805	
10	CV14	0111-3470-5105	C/M Multi 47PF 50V NPO 0805	
11	CV15	0111-3470-5105	C/M Multi 47PF 50V NPO 0805	
12	CV16	0120-5104-2531	P/C MEF 0.1uF 250V J F-K	
13	CV17	0101-1101-2012	E/C GEN. 100uF 100V 105' K	
14	CV18	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
15	CV19	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
16	CV20	0111-3103-5125	C/M Multi 0.01uF 50V Z5U 0805	
17	CV21	0111-3103-5125	C/M Multi 0.01uF 50V Z5U 0805	
18	CV22	0111-3103-5125	C/M Multi 0.01uF 50V Z5U 0805	
19	CV23	0111-1103-5222	C/C DISK 0.01uF 500V Z5U F-K	
20	CV24	0111-3820-5105	C/M Multi 82PF 50V NPO 0805	
21	CV25	0111-3820-5105	C/M Multi 82PF 50V NPO 0805	
22	CV26	0101-3109-2311	E/C N-P. 1uF 250V 105' F	
23	CV27	0101-3109-2311	E/C N-P. 1uF 250V 105' F	
24	CV28	0101-3109-2311	E/C N-P. 1uF 250V 105' F	
25	CV29	0101-1109-2311	E/C GEN. 1.0uF 250V 105' F	
26	CV30	0101-1109-2311	E/C GEN. 1.0uF 250V 105' F	
27	CV31	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
28	CV33	0101-1109-2311	E/C GEN. 1.0uF 250V 105' F	
29	CV34	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
30	CV36	0101-1109-2311	E/C GEN. 1.0uF 250V 105' F	
31	CV37	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
32	CV38	0111-1103-2322	C/C DISK 0.01uF 2KV Z5U F-K	
33	CV39	0120-3472-6331	P/C PPN 0.0047uF 630V J F-K	
34	CV40	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
35	CV41	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
36	CV42	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
37	CV43	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
38	CV45	0101-1478-1511	E/C GEN. 0.47uF 50V 105' F	
39	CV46	0111-3472-5115	C/M Multi 4700PF 50V X7R 0805	
40	CV49	0111-3220-5105	C/M Multi 22PF 50V NPO 0805	
41	CV50	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
42	CV51	0111-3820-5105	C/M Multi 82PF 50V NPO 0805	
43	CV52	0111-2509-5202	C/C DISK 5.0PF 500V NPO F-K	
44	CV53	0101-1101-1311	E/C GEN. 100uF 25V 105' F	
45	CV54	0101-1109-2311	E/C GEN. 1.0uF 250V 105' F	
46	CV55	0111-3331-5105	C/M Multi 330PF 50V NPO 0805	
47	CV56	0111-3821-5105	C/M Multi 820PF 50V NPO 0805	
48	CV57	0111-3331-5105	C/M Multi 330PF 50V NPO 0805	
49	CV58	0111-3331-5105	C/M Multi 330PF 50V NPO 0805	
50	CV59	0111-2509-5202	C/C DISK 5.0PF 500V NPO F-K	

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ITEM	LOCATION	PART NO	DESCRIPTION	REMARK
51	CV60	0111-2509-5202	C/C DISK 5.0PF 500V NPO F-K	
52	CV61	0111-1103-5222	C/C DISK 0.01uF 500V Z5U F-K	
53	CV62	0111-3390-5105	C/M Multi 39PF 50V NPO 0805	
54	CV63	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
55	CV64	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
56	CV65	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
57	CV66	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
58	CV67	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
59	CV68	0101-1229-1511	E/C GEN. 2.2uF 50V 105' F	
60	CV69	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
61	CV70	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
62	CV71	0101-3229-1511	E/C N-P 2.2uF 50V 105' F	
63	CV72	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
64	CV73	0111-3103-5125	C/M Multi 0.01uF 50V Z5U 0805	
65	CV74	0111-3103-5125	C/M Multi 0.01uF 50V Z5U 0805	
66	CV75	0111-3103-5125	C/M Multi 0.01uF 50V Z5U 0805	
67	CV76	0111-3104-5125	C/M Multi 0.1uF 50V Z5U 0805	
68	DV01	0390-5000-9132	GEN. DIODE BAV21 T	
69	DV02	0390-5000-9132	GEN. DIODE BAV21 T	
70	DV03	0390-5000-9132	GEN. DIODE BAV21 T	
71	DV04	0390-3000-1012	FAST DIODE 10DF2 T	
72	DV05	0390-5000-1052	GEN. DIODE 1N4148 T	
73	DV06	0390-5000-1052	GEN. DIODE 1N4148 T	
74	DV07	0390-5000-1052	GEN. DIODE 1N4148 T	
75	DV08	0390-5000-1052	GEN. DIODE 1N4148 T	
76	DV09	0390-5000-1052	GEN. DIODE 1N4148 T	
77	DV12	0390-5000-9132	GEN. DIODE BAV21 T	
78	DV13	0390-5000-9132	GEN. DIODE BAV21 T	
79	DV14	0390-5000-9132	GEN. DIODE BAV21 T	
80	DV17	0390-5000-1052	GEN. DIODE 1N4148 T	
81	DV18	0390-5000-1052	GEN. DIODE 1N4148 T	
82	DV19	0390-5000-1052	GEN. DIODE 1N4148 T	
83	DV20	0390-5000-1052	GEN. DIODE 1N4148 T	
84	GND1	0460-1701-0110	WH SRA4.3 1015#18 200mm BK T/D	
85	ICV01	0430-4004-9402	IC M52743BSP SDIP 36PIN	
86	ICV02	0430-4004-3114	IC VPS16 DIP 15PIN	
87	ICV02H	1712-0400-0041	HEAT SINK (106Wx15Tx47.5H)	
88	ICV02S	1724-3503-1202	SCREW PTAN M3.0x12L Zn-Cc	
89	ICV05	0430-7001-2126	IC CD0018AD DIP 16PIN	
90	ICV06	0430-4000-1104	IC LM358 DIP-8	
91	ICV07	0430-6000-5207	IC LM7812 TO-220 3 Pin	
92	LV01	0344-2280-0601	PEAKING COIL 0.22uH 1/4W K A-T	
93	LV02	0344-2280-0601	PEAKING COIL 0.22uH 1/4W K A-T	
94	LV03	0344-2280-0601	PEAKING COIL 0.22uH 1/4W K A-T	
95	LV04	0344-3390-0601	PEAKING COIL 3.3uH 1/4W K A-T	
96	LV05	0344-3390-0601	PEAKING COIL 3.3uH 1/4W K A-T	
97	LV06	0370-0000-1210	FERRITE CORE A6 RH 3.5x9x0.8-T52	
98	LV07	0130-1008-1850	RES. CF 1.0ohm 1/8W J A	
99	LV08	0130-1008-1850	RES. CF 1.0ohm 1/8W J A	
100	LV09	0130-1008-1850	RES. CF 1.0ohm 1/8W J A	

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ITEM	LOCATION	PART NO	DESCRIPTION	REMARK
101	LV10	0130-1009-1450	RES. CF 10ohm 1/4W J A	
102	LV11	0230-1009-0000	JUMPER WIRE 10*0.6mm	
103	LV12	0130-3309-1450	RES. CF 33ohm 1/4W J A	
104	LV13	0370-0000-1210	FERRITE CORE A6 RH 3.5x9x0.8-T52	
105	LV14	0370-0000-1210	FERRITE CORE A6 RH 3.5x9x0.8-T52	
106	LV15	0344-3390-0601	PEAKING COIL 3.3uH 1/4W K A-T	
107	LV16	0370-0000-1210	FERRITE CORE A6 RH 3.5x9x0.8-T52	
108	LV17	0370-0000-1210	FERRITE CORE A6 RH 3.5x9x0.8-T52	
109	PCB2	0172-1441-1200	PCB VIDEO BD K3 150x120x1.6t	
110	QV01	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
111	QV02	0410-4000-4111	TRANSISTOR BF423 TO-92 T	
112	QV03	0410-4000-3105	TRANSISTOR BF422 TO-92 T	
113	QV04	0410-4000-3105	TRANSISTOR BF422 TO-92 T	
114	QV05	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
115	QV09	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
116	QV10	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
117	QV11	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
118	RV01	0130-7509-1859	RES. CF 75ohm 1/8W J 1206	
119	RV02	0130-7509-1859	RES. CF 75ohm 1/8W J 1206	
120	RV03	0130-7509-1859	RES. CF 75ohm 1/8W J 1206	
121	RV04	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
122	RV05	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
123	RV06	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
124	RV07	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
125	RV08	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
126	RV09	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
127	RV10	0130-4709-1859	RES. CF 47ohm 1/8W J 1206	
128	RV100	0130-3300-1859	RES. CF 330ohm 1/8W J 1206	
129	RV101	0130-1009-1859	RES. CF 10ohm 1/8W J 1206	
130	RV102	0130-1009-1859	RES. CF 10ohm 1/8W J 1206	
131	RV103	0130-1009-1859	RES. CF 10ohm 1/8W J 1206	
132	RV104	0130-4709-1859	RES. CF 47ohm 1/8W J 1206	
133	RV105	0130-4700-1859	RES. CF 470ohm 1/8W J 1206	
134	RV106	0130-4301-1859	RES. CF 4.3Kohm 1/8W J 1206	
135	RV107	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
136	RV108	0130-5600-1859	RES. CF 560ohm 1/8W J 1206	
137	RV109	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
138	RV11	0130-4709-1859	RES. CF 47ohm 1/8W J 1206	
139	RV110	0130-1201-1859	RES. CF 1.2Kohm 1/8W J 1206	
140	RV111	0130-1003-1859	RES. CF 100Kohm 1/8W J 1206	
141	RV112	0130-4702-1859	RES. CF 47Kohm 1/8W J 1206	
142	RV113	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
143	RV114	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
144	RV115	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
145	RV116	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
146	RV117	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
147	RV12	0130-3900-1859	RES. CF 390ohm 1/8W J 1206	
148	RV13	0130-3900-1859	RES. CF 390ohm 1/8W J 1206	
149	RV14	0130-3900-1859	RES. CF 390ohm 1/8W J 1206	
150	RV15	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	

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ITEM	LOCATION	PART NO	DESCRIPTION	REMARK
151	RV16	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
152	RV17	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
153	RV18	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
154	RV19	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
155	RV20	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
156	RV21	0130-0000-1357	RES. MF 0.0ohm 1/3W J 1210	
157	RV22	0130-8200-1859	RES. CF 820ohm 1/8W J 1206	
158	RV23	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	
159	RV24	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
160	RV25	0130-2001-1859	RES. CF 2.0Kohm 1/8W J 1206	
161	RV26	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
162	RV27	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
163	RV28	0130-3309-1357	RES. MF 33ohm 1/3W J 1210	
164	RV29	0130-2201-1859	RES. CF 2.2Kohm 1/8W J 1206	
165	RV30	0130-3309-1357	RES. MF 33ohm 1/3W J 1210	
166	RV31	0130-3309-1357	RES. MF 33ohm 1/3W J 1210	
167	RV32	0132-4709-0252	RES. MOF 47ohm 2W J A-FK	
168	RV33	0130-1803-1357	RES. MF 180Kohm 1/3W J 1210	
169	RV34	0130-1803-1357	RES. MF 180Kohm 1/3W J 1210	
170	RV35	0130-1803-1357	RES. MF 180Kohm 1/3W J 1210	
171	RV36	0130-3309-1357	RES. MF 33ohm 1/3W J 1210	
172	RV37	0130-3309-1357	RES. MF 33ohm 1/3W J 1210	
173	RV38	0130-3309-1357	RES. MF 33ohm 1/3W J 1210	
174	RV42	0130-1503-1357	RES. MF 150Kohm 1/3W J 1210	
175	RV43	0130-1303-1859	RES. CF 130Kohm 1/8W J 1206	
176	RV44	0130-1803-1357	RES. MF 180Kohm 1/3W J 1210	
177	RV45	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
178	RV46	0130-1003-1859	RES. CF 100Kohm 1/8W J 1206	
179	RV47	0130-9102-1859	RES. CF 91Kohm 1/8W J 1206	
180	RV48	0130-3302-1859	RES. CF 33Kohm 1/8W J 1206	
181	RV49	0130-2402-1859	RES. CF 24Kohm 1/8W J 1206	
182	RV50	0130-1004-1859	RES. CF 1.0Mohm 1/8W J 1206	
183	RV51	0130-8202-1357	RES. MF 82Kohm 1/3W J 1210	
184	RV52	0130-4301-1859	RES. CF 4.3Kohm 1/8W J 1206	
185	RV53	0130-1001-1859	RES. CF 1.0Kohm 1/8W J 1206	
186	RV54	0130-1003-1859	RES. CF 100Kohm 1/8W J 1206	
187	RV55	0130-9102-1859	RES. CF 91Kohm 1/8W J 1206	
188	RV56	0130-1004-1859	RES. CF 1.0Mohm 1/8W J 1206	
189	RV57	0130-3302-1859	RES. CF 33Kohm 1/8W J 1206	
190	RV58	0130-2402-1859	RES. CF 24Kohm 1/8W J 1206	
191	RV59	0130-8202-1357	RES. MF 82Kohm 1/3W J 1210	
192	RV60	0130-4301-1859	RES. CF 4.3Kohm 1/8W J 1206	
193	RV61	0130-1001-1859	RES. CF 1.0Kohm 1/8W J 1206	
194	RV62	0130-1003-1250	RES. CF 100Kohm 1/2W J A	
195	RV63	0130-1001-1250	RES. CF 1.0Kohm 1/2W J A	
196	RV65	0130-1500-1859	RES. CF 150ohm 1/8W J 1206	
197	RV66	0130-4700-1859	RES. CF 470ohm 1/8W J 1206	
198	RV67	0130-4700-1859	RES. CF 470ohm 1/8W J 1206	
199	RV68	0130-4700-1859	RES. CF 470ohm 1/8W J 1206	
200	RV69	0130-1000-1859	RES. CF 100ohm 1/8W J 1206	

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ITEM	LOCATION	PART NO	DESCRIPTION	REMARK
201	RV70	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
202	RV71	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
203	RV72	0130-1002-1859	RES. CF 10Kohm 1/8W J 1206	
204	RV73	0130-3301-1859	RES. CF 3.3Kohm 1/8W J 1206	
205	RV74	0130-4709-1859	RES. CF 47ohm 1/8W J 1206	
206	RV75	0130-4709-1859	RES. CF 47ohm 1/8W J 1206	
207	RV76	0130-1001-1859	RES. CF 1.0Kohm 1/8W J 1206	
208	RV77	0130-3301-1859	RES. CF 3.3Kohm 1/8W J 1206	
209	RV78	0130-1004-1859	RES. CF 1.0Mohm 1/8W J 1206	
210	RV79	0130-2001-1859	RES. CF 2.0Kohm 1/8W J 1206	
211	RV80	0130-5101-1859	RES. CF 5.1Kohm 1/8W J 1206	
212	RV81	0130-3001-1859	RES. CF 3.0Kohm 1/8W J 1206	
213	RV83	0130-2200-1859	RES. CF 220ohm 1/8W J 1206	
214	RV84	0130-3902-1859	RES. CF 39Kohm 1/8W J 1206	
215	RV85	0130-5601-1859	RES. CF 5.6Kohm 1/8W J 1206	
216	RV86	0130-1008-1859	RES. CF 1.0ohm 1/8W J 1206	
217	RV87	0130-4709-1357	RES. MF 47ohm 1/3W J 1210	
218	RV88	0130-4709-1357	RES. MF 47ohm 1/3W J 1210	
219	RV89	0130-4709-1357	RES. MF 47ohm 1/3W J 1210	
220	RV90	0130-1003-1859	RES. CF 100Kohm 1/8W J 1206	
221	RV91	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
222	RV92	0130-3309-1859	RES. CF 33ohm 1/8W J 1206	
223	RV93	0130-1001-1859	RES. CF 1.0Kohm 1/8W J 1206	
224	RV94	0130-9101-1859	RES. CF 9.1Kohm 1/8W J 1206	
225	RV98	0130-3300-1859	RES. CF 330ohm 1/8W J 1206	
226	RV99	0130-3300-1859	RES. CF 330ohm 1/8W J 1206	
227	SGV01	0270-0002-0100	SPARK GAP 200V T A21F	
228	SGV02	0270-0002-0100	SPARK GAP 200V T A21F	
229	SGV03	0270-0002-0100	SPARK GAP 200V T A21F	
230	SGV04	0270-0001-2220	SPARK GAP 1.2KV A	
231	SGV05	0270-0003-0100	SPARK GAP 300V T	
232	WV01	0451-2500-0644	WAFER 2.50mm 6P 90' Kink	
233	WV02	0451-2500-1044	WAFER 2.50mm 10P 90' Kink	
234	WV03	0451-2500-0844	WAFER 2.50mm 8P 90' Kink	
235	WV04	0452-1000-0296	WAFER 10mm 2P(BLACK)	
236	WV05	0261-0000-0051	CRT SOCKET HPS0720-011000 MIT.	
237	ZDV01	0400-0891-2000	ZENER 9C1 8.9-9.3V 1/2W	

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11.4. 3019-0152-0160 MAIN/PWR/CTRL BD

ITEM	LOC	PART NO	DESCRIPTION	REMARK
1	CA01	0122-0474-2702	P/C X2 0.47uF 275V K B	
2	CA02	0122-1222-2522	D/C Y 2200PF 250V M B	
3	CA03	0122-1222-2522	D/C Y 2200PF 250V M B	
4	CA04	0101-1331-4003	E/C GEN. 330uF 400V 85' S	
5	CA05	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
6	CA06	0111-1102-1312	C/C DISK 1000PF 1KV Y5P F-K	
7	CA07	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
8	CA08	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
9	CA09	0101-1221-1311	E/C GEN. 220uF 25V 105' F	
10	CA10	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
11	CA11	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
12	CA12	0120-5103-0531	P/C MEF 0.01uF 50V J F-K (T)	
13	CA13	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
14	CA14	0111-1222-5112	C/C DISK 2200PF 50V Y5P F-K	
15	CA15	0101-1221-1311	E/C GEN. 220uF 25V 105' F	
16	CA16	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
17	CA17	0111-1331-1312	C/C DISK 330PF 1KV Y5P F-K	
18	CA19	0111-1472-1322	C/C DISK 4700PF 1KV Z5U F-K	
19	CA20	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
20	CA21	0101-1101-2212	E/C GEN. 100uF 200V 105' K	
21	CA22	0101-1330-2212	E/C GEN. 33uF 200V 105' K	
22	CA23	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
23	CA24	0101-1221-2012	E/C GEN. 220uF 100V 105'K	
24	CA25	0101-1102-1212	E/C GEN. 1000uF 16V 105'K	
25	CA26	0101-1222-1212	E/C GEN. 2200uF 16V 105' K	
26	CA27	0111-1102-1312	C/C DISK 1000PF 1KV Y5P F-K	
27	CA28	0101-1102-1312	E/C GEN. 1000uF 25V 105' K	
28	CA29	0101-1478-1511	E/C GEN. 0.47uF 50V 105' F	
29	CA30	0111-1471-5112	C/C DISK 470PF 50V Y5P F-K	
30	CA31	0122-0103-2702	P/C X2 0.01uF 275V K B	
31	CA32	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
32	CA33	0122-1472-2522	D/C Y 4700PF 250V M N-F	
33	CA34	0122-1472-2522	D/C Y 4700PF 250V M N-F	
34	CA35	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
35	CA37	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
36	CA38	0111-1101-1312	C/C DISK 100PF 1KV Y5P F-K	
37	CA39	0111-1101-1312	C/C DISK 100PF 1KV Y5P F-K	
38	CA40	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
39	CA41	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
40	CA42	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
41	CA43	0101-1229-4512	E/C GEN. 2.2uF 450V 105' K	
42	CA47	0130-3302-1850	RES. CF 33Kohm 1/8W J A	
43	CA49	0120-3472-6331	P/C PPN 0.0047uF 630V J F-K	
44	CA50	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
45	CA51	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
46	CA52	0111-1331-1312	C/C DISK 330PF 1KV Y5P F-K	
47	CB01	0101-3109-1511	E/C N-P 1uF 50V 105' F	
48	CB02	0121-2223-1032	P/C R85 0.022uF 100V J B	
49	CB03	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
50	CB05	0121-2473-1032	P/C R85 0.047uF 100V J B	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
51	CB06	0121-2473-1032	P/C R85 0.047uF 100V J B	
52	CB07	0111-3102-5101	C/M Multi 1000PF 50V NPO DIP	
53	CB08	0101-1479-1511	E/C GEN. 4.7uF 50V 105' F	
54	CB09	0121-2333-1032	P/C R85 0.033uF 100V J B	
55	CB10	0121-2224-0632	P/C R85 0.22uF 63V J B	
56	CB11	0101-1479-1511	E/C GEN. 4.7uF 50V 105' F	
57	CB12	0111-3102-5101	C/M Multi 1000PF 50V NPO DIP	
58	CB13	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
59	CB14	0121-2474-0632	P/C R85 0.47uF 63V J BOX	
60	CB15	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
61	CB16	0121-2274-0632	P/C R85 0.27uF 63V J B	
62	CB18	0120-5224-1031	P/C MEF 0.22uF 100V J F-K	
63	CB19	0101-1102-1312	E/C GEN. 1000uF 25V 105' K	
64	CB20	0101-1471-1312	E/C GEN. 470uF 25V 105' K	
65	CB21	0101-1101-1411	E/C GEN. 100uF 35V 105' F	
66	CB22	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
67	CB23	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
68	CB24	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
69	CB26	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
70	CB30	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
71	CB31	0111-1471-5112	C/C DISK 470PF 50V Y5P F-K	
72	CB33	0101-1229-1511	E/C GEN. 2.2uF 50V 105' F	
73	CB34	0101-1478-1511	E/C GEN. 0.47uF 50V 105' F	
74	CB35	0111-1472-5122	C/C DISK 4700PF 50V Z5U F-K	
75	CC01	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
76	CC02	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
77	CC03	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
78	CC04	0101-1479-1511	E/C GEN. 4.7uF 50V 105' F	
79	CC06	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
80	CC07	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
81	CC08	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
82	CC09	0101-1221-1211	E/C GEN. 220uF 16V 105' F	
83	CC10	0111-2220-5102	C/C DISK 22PF 50V NPO F-K	
84	CC11	0111-2220-5102	C/C DISK 22PF 50V NPO F-K	
85	CC12	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
86	CC13	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
87	CC15	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
88	CC16	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
89	CC18	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
90	CC19	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
91	CC20	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
92	CC21	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
93	CC22	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
94	CC23	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
95	CC24	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
96	CC25	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
97	CC26	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
98	CC27	0111-2680-5102	C/C DISK 68PF 50V NPO F-K	
99	CC28	0111-2680-5102	C/C DISK 68PF 50V NPO F-K	
100	CC29	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
101	CC30	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
102	CC31	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
103	CC33	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
104	CC34	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
105	CC35	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
106	CC36	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
107	CE01	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
108	CE03	0111-1331-5112	C/C DISK 330PF 50V Y5P F-K	
109	CE04	0101-3109-1511	E/C N-P 1uF 50V 105' F	
110	CE06	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
111	CE07	0111-1331-5112	C/C DISK 330PF 50V Y5P F-K	
112	CE08	0101-3109-1511	E/C N-P 1uF 50V 105' F	
113	CE10	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
114	CE11	0111-1331-5112	C/C DISK 330PF 50V Y5P F-K	
115	CE12	0101-3109-1511	E/C N-P 1uF 50V 105' F	
116	CE14	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
117	CE15	0111-1331-5112	C/C DISK 330PF 50V Y5P F-K	
118	CE16	0101-3109-1511	E/C N-P 1uF 50V 105' F	
119	CE18	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
120	CE20	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
121	CG01	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
122	CG02	0120-2822-0531	P/C PEN 0.0082uF 50V J F-K (T)	
123	CG03	0120-5103-0531	P/C MEF 0.01uF 50V J F-K (T)	
124	CG04	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
125	CG08	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
126	CG09	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
127	CG10	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
128	CG11	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
129	CG12	0111-1682-5112	C/C DISK 6800PF 50V Y5P F-K	
130	CG13	0120-3102-6331	P/C PPN 0.001uF 630V J F-K	
131	CG14	0111-1822-5112	C/C DISK 8200PF 50V Y5P F-K	
132	CG16	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
133	CG17	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
134	CG19	0101-1100-2312	E/C GEN. 10uF 250V 105' K	
135	CG20	0120-5103-2534	P/C MEF 0.01uF 250V J F-K T	
136	CG21	0120-5224-2531	P/C MEF 0.22uF 250V J F-K	
137	CG22	0120-5104-0531	P/C MEF 0.1uF 50V J F-K (T)	
138	CG23	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
139	CG24	0111-1222-5212	C/C DISK 2200PF 500V Y5P F-K	
140	CG25	0111-1101-5212	C/C DISK 100PF 500V Y5P F-K	
141	CG26	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
142	CG27	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
143	CG28	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
144	CG29	0120-5224-1031	P/C MEF 0.22uF 100V J F-K	
145	CG30	0101-1100-2011	E/C GEN. 10uF 100V 105' F	
146	CG31	0101-1330-2212	E/C GEN. 33uF 200V 105' K	
147	CG32	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
148	CG33	0101-3100-1511	E/C N-P 10uF 50V 105' F	
149	CG34	0120-3102-6331	P/C PPN 0.001uF 630V J F-K	
150	CG36	0101-1470-1211	E/C GEN. 47uF 16V 105' F	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
151	CG38	0111-1101-1312	C/C DISK 100PF 1KV Y5P F-K	
152	CG39	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
153	CG40	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
154	CH01	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
155	CH02	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
156	CH03	0120-2102-0531	P/C PEN 0.001uF 50V J F-K (T)	
157	CH04	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
158	CH05	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
159	CH06	0121-2474-0632	P/C R85 0.47uF 63V J BOX	
160	CH07	0111-1182-5112	C/C DISK 1800PF 50V Y5P F-K	
161	CH08	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
162	CH09	0101-1100-1511	E/C GEN. 10uF 50V 105' F	
163	CH10	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
164	CH11	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
165	CH13	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
166	CH14	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
167	CH15	0111-1102-1312	C/C DISK 1000PF 1KV Y5P F-K	
168	CH16	0101-1220-2312	E/C GEN. 22uF 250V 105' K	
169	CH17	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
170	CH18	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
171	CH19	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
172	CH20	0101-3101-1211	E/C N-P 100uF 16V 105' F	
173	CH21	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
174	CH22	0121-7272-9132	P/C R76 2700PF 1.6KV J B	
175	CH23	0120-2222-1031	P/C PEN 0.0022uF 100V J F-K (T)	
176	CH24	0101-3109-1511	E/C N-P 1uF 50V 105' F	
177	CH25	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
178	CH26	0120-5105-0531	P/C MEF 1.0uF 50V J F-K	
179	CH27	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
180	CH28	0101-1101-1311	E/C GEN. 100uF 25V 105' F	
181	CH29	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
182	CH30	0111-1331-5112	C/C DISK 330PF 50V Y5P F-K	
183	CH32	0111-1103-5122	C/C DISK 0.01uF 50V Z5U F-K	
184	CH33	0120-2102-1031	P/C PEN 0.001uF 100V J F-K (T)	
185	CH34	0111-1331-5112	C/C DISK 330PF 50V Y5P F-K	
186	CH35	0111-1104-5102	C/C DISK 0.1uF 50V Y5V F-K	
187	CH36	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
188	CH37	0120-9104-2531	P/C MPS 0.1uF 250V J F-K	
189	CH38	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
190	CH39	0120-9224-2531	P/C MPS 0.22uF 250V J F-K	
191	CH40	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
192	CH41	0120-9394-2531	P/C MPS 0.39uF 250V J F-K	
193	CH42	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
194	CH43	0120-9105-2533	P/C MPS 1.0uF 250V J F-K (pitch:27.5mm)	
195	CH44	0121-8224-4031	P/C MPSA 0.22uF 400V J F-K	
196	CH45	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
197	CH47	0101-1470-1211	E/C GEN. 47uF 16V 105' F	
198	CH48	0101-1471-1211	E/C GEN. 470uF 16V 105' F	
199	CH49	0101-1109-1511	E/C GEN. 1.0uF 50V 105'F	
200	CH51	0120-4102-9131	P/C PPS 0.001uF 1.6KV J F-K	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
201	CH53	0101-1101-1211	E/C GEN. 100uF 16V 105' F	
202	CH55	0111-2150-5102	C/C DISK 15PF 50V NPO F-K	
203	CH56	0111-1102-5112	C/C DISK 1000PF 50V Y5P F-K	
204	CH57	0120-9104-2531	P/C MPS 0.1uF 250V J F-K	
205	CH60	0111-2101-5102	C/C DISK 100PF 50V NPO F-K	
206	CH61	0101-3109-1511	E/C N-P 1uF 50V 105' F	
207	CH63	0121-7272-9132	P/C R76 2700PF 1.6KV J B	
208	CH64	0101-1221-1311	E/C GEN. 220uF 25V 105' F	
209	DA01	0390-5001-0202	GEN. DIODE 1N5406 T/B	
210	DA02	0390-5001-0202	GEN. DIODE 1N5406 T/B	
211	DA03	0390-5001-0202	GEN. DIODE 1N5406 T/B	
212	DA04	0390-5001-0202	GEN. DIODE 1N5406 T/B	
213	DA05	0390-3000-4022	FAST DIODE BA159 T	
214	DA06	0390-5000-1052	GEN. DIODE 1N4148 T	
215	DA07	0390-3000-1012	FAST DIODE 10DF2 T	
216	DA08	0390-3000-1012	FAST DIODE 10DF2 T	
217	DA09	0390-5000-1052	GEN. DIODE 1N4148 T	
218	DA10	0390-5000-1052	GEN. DIODE 1N4148 T	
219	DA11	0390-5000-1052	GEN. DIODE 1N4148 T	
220	DA12	0390-5000-1052	GEN. DIODE 1N4148 T	
221	DA13	0390-5000-1052	GEN. DIODE 1N4148 T	
222	DA14	0390-3000-4022	FAST DIODE BA159 T	
223	DA15	0390-3000-4022	FAST DIODE BA159 T	
224	DA16	0390-3001-4022	FAST DIODE FUF5407 T	
225	DA16H	1712-0600-0020	HEAT SINK (4.4Wx22.6Lx35.5H)	
226	DA17	0390-3001-4022	FAST DIODE FUF5407 T	
227	DA17H	1712-0600-0020	HEAT SINK (4.4Wx22.6Lx35.5H)	
228	DA18	0390-3002-9022	FAST DIODE FUF5404 T	
229	DA19	0390-3002-9022	FAST DIODE FUF5404 T	
230	DA20	0390-3002-9022	FAST DIODE FUF5404 T	
231	DA20H	1712-0600-0020	HEAT SINK (4.4Wx22.6Lx35.5H)	
232	DA21	0390-5000-1052	GEN. DIODE 1N4148 T	
233	DA22	0390-5000-3202	GEN. DIODE 1N4002F T	
234	DA23	0390-3000-1012	FAST DIODE 10DF2 T	
235	DA24	0390-5000-1052	GEN. DIODE 1N4148 T	
236	DA28	0390-5000-3202	GEN. DIODE 1N4002F T	
237	DA29	0390-5000-1052	GEN. DIODE 1N4148 T	
238	DB02	0390-3000-1012	FAST DIODE 10DF2 T	
239	DB03	0390-5000-1052	GEN. DIODE 1N4148 T	
240	DC01	0390-5000-1052	GEN. DIODE 1N4148 T	
241	DG01	0390-5000-1052	GEN. DIODE 1N4148 T	
242	DG02	0390-5000-1052	GEN. DIODE 1N4148 T	
243	DG03	0390-3004-8022	FAST DIODE FUF5408 T	
244	DG04	0390-5000-1052	GEN. DIODE 1N4148 T	
245	DG05	0390-5000-1052	GEN. DIODE 1N4148 T	
246	DG06	0390-3003-2052	FAST DIODE BYT53G T	
247	DG07	0390-5000-1052	GEN. DIODE 1N4148 T	
248	DG08	0390-5000-1052	GEN. DIODE 1N4148 T	
249	DG09	0390-5000-1052	GEN. DIODE 1N4148 T	
250	DG10	0390-5000-1052	GEN. DIODE 1N4148 T	

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251	DG11	0390-5000-1052	GEN. DIODE 1N4148 T	
252	DG13	0390-5000-1052	GEN. DIODE 1N4148 T	
253	DG14	0390-3002-8022	FAST DIODE FUF5402 T	
254	DG15	0390-3000-1012	FAST DIODE 10DF2 T	
255	DG16	0390-3003-4022	FAST DIODE BY399S T	
256	DG17	0390-5000-9132	GEN. DIODE BAV21 T	
257	DG18	0390-5000-9132	GEN. DIODE BAV21 T	
258	DH01	0390-5000-1052	GEN. DIODE 1N4148 T	
259	DH02	0390-5000-1052	GEN. DIODE 1N4148 T	
260	DH03	0390-5000-1052	GEN. DIODE 1N4148 T	
261	DH04	0390-5000-1052	GEN. DIODE 1N4148 T	
262	DH05	0390-5000-1052	GEN. DIODE 1N4148 T	
263	DH06	0390-3002-9022	FAST DIODE FUF5404 T	
264	DH07	0390-5000-1052	GEN. DIODE 1N4148 T	
265	DH08	0390-2000-2180	DAMPER DIODE FMP-G5FS N-F	
266	DH08S	1724-2303-0802	SCREW, BBC M3.0x8L, Zn-Cc	
267	DH09	0390-3000-1012	FAST DIODE 10DF2 T	
268	DH10	0390-3000-1012	FAST DIODE 10DF2 T	
269	DH11	0390-6000-1012	SCHOTTKY DIODE 11DQ06 T	
270	DH12	0390-5000-1052	GEN. DIODE 1N4148 T	
271	DH15	0230-1009-0000	JUMPER WIRE 10*0.6mm	
272	DH17	0390-5000-1052	GEN. DIODE 1N4148 T	
273	DH18	0390-5000-1052	GEN. DIODE 1N4148 T	
274	DH19	0390-5000-1052	GEN. DIODE 1N4148 T	
275	DH20	0390-5000-1052	GEN. DIODE 1N4148 T	
276	DH21	0390-5000-1052	GEN. DIODE 1N4148 T	
277	DH22	0390-5000-1052	GEN. DIODE 1N4148 T	
278	FA01	0180-4402-5201	FUSE T-L 250V 4A 5*20mm Glass	
279	FA011	0190-0000-0010	FUSE CLIP 5*20mm	
280	FG01	0370-0000-0710	FERRITE CORE RH 16x17x9	
281	FG02	0370-0000-0510	FERRITE CORE 17.5x28.5x9.5	
282	FG02C	1701-1402-0300	WIRE SADDLE/ YJ-203S	
283	G001	0460-2001-0092	WH 1015#18 320mm BLACK T/C	
284	G003	0460-2001-0070	WH 1015#18 110mm T/D BLACK	
285	G013	0460-2001-0080	WH 1015#18 65mm T/D BLACK	
286	G020	0460-2001-0080	WH 1015#18 65mm T/D BLACK	
287	G024	0460-2001-0070	WH 1015#18 110mm T/D BLACK	
288	G028	0460-1701-0120	WH SRA4.3 1015#18 125mm BK T/D	
289	ICA01	0430-4004-0230	IC TOP221Y TO-220 3PIN	
290	ICA02	0430-7000-3107	IC UC3842N DIP-8 Pin	
291	ICA03	0430-6000-3210	IC MC7805CT TO-220 3 Pin	
292	ICA04	0430-7000-1110	IC 4N35 DIP 6PIN	
293	ICA05	0430-6000-4310	IC TL431CLP TO-92 3PIN T	
294	ICA06	0390-7000-1132	TRIGGER,SCR BT169D T 3PIN	
295	ICA07	0430-6000-5207	IC LM7812 TO-220 3 Pin	
296	ICA07H	1712-0400-1400	HEAT SINK (23.5Wx16.5Tx25H)	
297	ICA07S	1724-1703-0602	SCREW,PB,M3.0x6L,Zn-Cc	
298	ICB01	0430-4004-1407	IC TDA9106-2 SDIP 42PIN	
299	ICB02	0430-4001-7107	IC TDA8172 DIP 7PIN	
300	ICB02H	1712-0300-0080	HEAT SINK FOR (80Wx39Tx69H)	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
301	ICB02R	1701-1100-0200	SILICON RUBBER/TO-2203	
302	ICB02S	1724-2603-0802	SCREW,BTCW,M3.0x8L,Zz-Cc	
303	ICB02W	1701-1300-0100	TRANSISTOR WASHER/602S	
304	ICC01	0430-5001-2110	IC MC68HC705BD7P DIP 40PIN	
305	ICC01S	0201-2544-0000	IC SOCKET 2.54mm 40PIN	
306	ICC03	0430-3000-4117	IC 24LC08B/P DIP 8PIN	
307	ICC03S	0201-2540-8000	IC SOCKET 2.54mm 8PIN	
308	ICC04	0430-0000-2110	IC MC14013BCP DIP-14	
309	ICC05	0430-7001-3319	IC PST994C TO-92 3PIN	
310	ICE01	0430-4000-6104	IC LM324N DIP-14	
311	ICG02	0430-7000-7107	IC UC3843N DIP 8PIN	
312	ICG03	0430-4000-1104	IC LM358 DIP-8	
313	ICG04	0430-4000-1104	IC LM358 DIP-8	
314	ICH01	0430-3000-1115	IC TLC555CP DIP-8	
315	ICH02	0430-4000-5107	IC TL084CN DIP-14 Pin	
316	ICH03	0430-4001-3104	IC LM393N DIP-8	
317	LA01	0360-1000-0010	RING CORE L:250uH 4A	
318	LA02	0360-1000-0010	RING CORE L:250uH 4A	
319	LA03	0370-0000-0210	BEAD CORE RH 3.5x8x1.0mm T	
320	LA04	0361-1000-0010	DRUM CORE L:60uH 1A(9*12)	
321	LA05	0370-0000-1010	FERRITE CORE RH 3.5x6x1.0(W)x2	
322	LA07	0361-1000-0090	DRUM CORE L:240uH 0.5A(8x10)	
323	LA08	0370-0000-0210	BEAD CORE RH 3.5x8x1.0mm T	
324	LA09	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
325	LA10	0370-0000-1010	FERRITE CORE RH 3.5x6x1.0(W)x2	
326	LA11	0370-0000-0210	BEAD CORE RH 3.5x8x1.0mm T	
327	LA12	0130-4708-1254	RES. CF 4.7ohm 1/2W J R-K	
328	LA14	0370-0000-1010	FERRITE CORE RH 3.5x6x1.0(W)x2	
329	LB01	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
330	LB02	0230-1009-0000	JUMPER WIRE 10*0.6mm	
331	LC01	0130-2208-1450	RES. CF 2.2ohm 1/4W J A	
332	LG01	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
333	LG02	0370-0000-1010	FERRITE CORE RH 3.5x6x1.0(W)x2	
334	LH01	0351-0130-0040	X'FMR DRIVE EI30 1mH 1.8A 85'	
335	LH02	0354-0125-0030	X'FMR H-CEN EI25 7.0mH 0.45A	
336	LH03	0381-0000-0080	LINEARITY COIL 18uH -6A	
337	LH04	0361-1000-0090	DRUM CORE L:240uH 0.5A(8x10)	
338	LH05	0130-1008-0154	RES. CF 1.0ohm 1W J R-K	
339	LH06	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
340	MB04	1712-0100-0570	HOLD FOR OPTION BD	
341	P13	0460-2001-0160	WH 1015#18 75mm T/D BLACK	
342	P15	0460-2001-0020	WH 1007#24 220mm RED T/D	
343	PA2	0460-3500-0020	WH 1185#28 290mm GRAY	
344	PA5	0460-2001-0150	WH 1007#24 100mm GREEN T/C	
345	PCB1	0174-2240-0706	PCB MAIN/PWR/CTRL BD K1 337x271x1.6t	
346	PRC01	0141-1002-1950	ARRAY RES. A(X) 10Kohm 1/8W J9P	
347	PRC02	0141-3301-1550	ARRAY RES. A(X) 3.3Kohm 1/8W J5P	
348	QA01	0420-1001-2501	POWER MOS IRFPE50 TO-3P	
349	QA01H	1712-0400-1301	HEAT SINK 60Wx15Tx80H-40H	
350	QA01R	1701-1100-0100	SILICON RUBBER/TO-3P3	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
351	QA01S	1724-1703-1002	SCREW,PB,M3.0x10L,Zn-Cc	
352	QA02	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
353	QA03	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
354	QA04	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
355	QA05	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
356	QA06	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
357	QA08	0410-1000-1306	TRANSISTOR 2SB649AC TO-126	
358	QB01	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
359	QB02	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
360	QB03	0410-0000-1109	TRANSISTOR 2SA733P TO-92 T	
361	QB04	0410-0000-1109	TRANSISTOR 2SA733P TO-92 T	
362	QB05	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
363	QB06	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
364	QC02	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
365	QC03	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
366	QE01	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
367	QE02	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
368	QE03	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
369	QE04	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
370	QE05	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
371	QE06	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
372	QE07	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
373	QE08	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
374	QG01	0410-0000-1109	TRANSISTOR 2SA733P TO-92 T	
375	QG02	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
376	QG03	0420-1000-5509	POWER MOS 2SK2485 TO-3P	
377	QG03H	1712-0400-0030	HEAT SINK (105Wx15Tx80H)	
378	QG03R	1701-1100-0100	SILICON RUBBER/TO-3P3	
379	QG03S	1724-2603-1002	SCREW,BTCW,M3.0x10L,Zn-Cc	
380	QG04	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
381	QG05	0410-4000-4111	TRANSISTOR BF423 TO-92 T	
382	QG06	0410-4000-1111	TRANSISTOR BF420 TO-92 T	
383	QG07	0410-0000-1109	TRANSISTOR 2SA733P TO-92 T	
384	QG08	0410-4000-3105	TRANSISTOR BF422 TO-92 T	
385	QG09	0410-6000-1311	TRANSISTOR BD139 TO-126	
386	QG09H	1712-0400-0100	HEAT SINK (12Wx5Tx22H)	
387	QG09S	1724-1703-0602	SCREW,PB,M3.0x6L,Zn-Cc	
388	QG10	0410-6000-2311	TRANSISTOR BD140 TO-126	
389	QG10H	1712-0400-0100	HEAT SINK (12Wx5Tx22H)	
390	QG10S	1724-1703-0602	SCREW,PB,M3.0x6L,Zn-Cc	
391	QG11	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
392	QG12	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
393	QH01	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
394	QH02	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
395	QH03	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
396	QH04	0410-4000-1111	TRANSISTOR BF420 TO-92 T	
397	QH05	0420-1000-1401	POWER MOS IRF630 TO-220	
398	QH06	0410-2001-0511	TRANSISTOR BU2532AL TO-3P	
399	QH06R	1701-1100-1000	SILICON RUBBER / TO-3025	
400	QH06S	1724-2603-1002	SCREW,BTCW,M3.0x10L,Zn-Cc	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
401	QH07	0410-6000-1311	TRANSISTOR BD139 TO-126	
402	QH07N	1910-3005-0002	NUT M3.0x0.5,Zn-Cc	
403	QH07S	1724-1703-0802	SCREW,PB,M3.0x8L,Zn-Cc	
404	QH08	0410-6000-2311	TRANSISTOR BD140 TO-126	
405	QH09	0410-6000-1311	TRANSISTOR BD139 TO-126	
406	QH09H	1712-0400-0200	HEAT SINK (15Wx11Tx22.0H)	
407	QH09S	1724-1703-0602	SCREW,PB,M3.0x6L,Zn-Cc	
408	QH10	0410-6000-1311	TRANSISTOR BD139 TO-126	
409	QH10N	1910-3005-0002	NUT M3.0x0.5,Zn-Cc	
410	QH10S	1724-1703-0802	SCREW,PB,M3.0x8L,Zn-Cc	
411	QH11	0410-6000-2311	TRANSISTOR BD140 TO-126	
412	QH12	0420-1000-1401	POWER MOS IRF630 TO-220	
413	QH13	0420-1000-2407	POWER MOS IRF640 TO-220	
414	QH14	0420-1000-2407	POWER MOS IRF640 TO-220	
415	QH14H	1712-0400-0200	HEAT SINK (15Wx11Tx22.0H)	
416	QH14S	1724-1703-0602	SCREW,PB,M3.0x6L,Zn-Cc	
417	QH15	0420-1000-2407	POWER MOS IRF640 TO-220	
418	QH15H	1712-0400-1201	HEAT SINK (15Wx11Tx60H)	
419	QH15R	1701-1100-0200	SILICON RUBBER/TO-2203	
420	QH15S	1724-1703-0602	SCREW,PB,M3.0x6L,Zn-Cc	
421	QH15W	1701-1300-0100	TRANSISTOR WASHER/602S	
422	QH16	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
423	QH17	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
424	QH18	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
425	QH19	0420-1000-1401	POWER MOS IRF630 TO-220	
426	QH20	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
427	QH22	0410-2000-1110	TRANSISTOR 2SC945P TO-92 T	
428	QH23	0410-2000-3106	TRANSISTOR 2SC1213AC TO-92 T	
429	RA01	0130-1004-1250	RES. CF 1.0Mohm 1/2W J A	
430	RA02	0130-3603-1250	RES. CF 360Kohm 1/2W J A	
431	RA03	0133-1003-0154	RES. MOF(M) 100Kohm 1W J R-K	
432	RA04	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
433	RA05	0130-3308-1450	RES. CF 3.3ohm 1/4W J A	
434	RA06	0130-6809-1450	RES. CF 68ohm 1/4W J A	
435	RA07	0130-2209-1450	RES. CF 22ohm 1/4W J A	
436	RA08	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
437	RA09	0130-1001-1450	RES. CF 1.0Kohm 1/4W J A	
438	RA10	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
439	RA11	0132-0128-0252	RES. MOF 0.12ohm 2W J A-FK	
440	RA12	0130-2702-1850	RES. CF 27Kohm 1/8W J A	
441	RA13	0130-1102-1450	RES. CF 11Kohm 1/4W J A	
442	RA14	0130-4709-1450	RES. CF 47ohm 1/4W J A	
443	RA15	0130-1004-1850	RES. CF 1.0Mohm 1/8W J A	
444	RA16	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
445	RA17	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
446	RA18	0130-1003-1450	RES. CF 100Kohm 1/4W J A	
447	RA19	0135-3302-0551	RES. CEMENT 33Kohm 5W J SQM	
448	RA20	0133-1001-0554	RES. MOF(M) 1.0Kohm 5W J R-K	
449	RA22	0133-0518-0154	RES. MOF(M) 0.51ohm 1W J R-K	
450	RA23	0133-1203-0152	RES. MOF(M) 120Kohm 1W J A-FK	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
451	RA24	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
452	RA25	0130-1000-1850	RES. CF 100ohm 1/8W J A	
453	RA26	0130-1000-1850	RES. CF 100ohm 1/8W J A	
454	RA27	0130-1008-1850	RES. CF 1.0ohm 1/8W J A	
455	RA28	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
456	RA29	0131-6202-0112	RES. MF 62Kohm 1W F A-FK	
457	RA30	0133-3908-0252	RES. MOF(M) 3.9ohm 2W J A-FK	
458	RA31	0370-0000-1610	BEAD CORE W4B RH 3.5x6x1.0 T	
459	RA32	0130-1009-1450	RES. CF 10ohm 1/4W J A	
460	RA33	0131-7500-1410	RES. MF 750ohm 1/4W F A	
461	RA34	0130-3900-1850	RES. CF 390ohm 1/8W J A	
462	RA36	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
463	RA37	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
464	RA38	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
465	RA40	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
466	RA41	0130-1001-1450	RES. CF 1.0Kohm 1/4W J A	
467	RA42	0130-4709-1850	RES. CF 47ohm 1/8W J A	
468	RA43	0130-1500-1850	RES. CF 150ohm 1/8W J A	
469	RA44	0130-2201-1850	RES. CF 2.2Kohm 1/8W J A	
470	RA45	0133-1000-0254	RES. MOF(M) 100ohm 2W J R-K	
471	RA46	0133-1000-0252	RES. MOF(M) 100ohm 2W J A-FK	
472	RA47	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
473	RA48	0130-1000-1850	RES. CF 100ohm 1/8W J A	
474	RA49	0130-1001-1254	RES. CF 1.0Kohm 1/2W J R-K	
475	RA50	0130-1201-1850	RES. CF 1.2Kohm 1/8W J A	
476	RA57	0130-1000-1850	RES. CF 100ohm 1/8W J A	
477	RA59	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
478	RA60	0130-4700-1850	RES. CF 470ohm 1/8W J A	
479	RA61	0130-3309-1254	RES. CF 33ohm 1/2W J R-K	
480	RA62	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
481	RBC1	0130-4709-1850	RES. CF 47ohm 1/8W J A	
482	RB02	0130-3300-1850	RES. CF 330ohm 1/8W J A	
483	RB03	0130-2701-1850	RES. CF 2.7Kohm 1/8W J A	
484	RB04	0130-1008-1850	RES. CF 1.0ohm 1/8W J A	
485	RB05	0130-1801-1850	RES. CF 1.8Kohm 1/8W J A	
486	RB06	0131-5621-1810	RES. MF 5.62Kohm 1/8W F A	
487	RB07	0130-8201-1850	RES. CF 8.2Kohm 1/8W J A	
488	RB08	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
489	RB09	0130-1008-1850	RES. CF 1.0ohm 1/8W J A	
490	RB10	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
491	RB11	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
492	RB12	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
493	RB13	0130-3309-1850	RES. CF 33ohm 1/8W J A	
494	RB14	0130-3900-1850	RES. CF 390ohm 1/8W J A	
495	RB15	0131-1212-1410	RES. MF 12.1Kohm 1/4W F A	
496	RB16	0131-6811-1410	RES. MF 6.81Kohm 1/4W F A	
497	RB17	0132-1008-0252	RES. MOF 1ohm 2W J A-FK	
498	RB18	0130-4300-1250	RES. CF 430ohm 1/2W J A	
499	RB19	0130-1508-1450	RES. CF 1.5ohm 1/4W J A	
500	RB20	0131-6811-1810	RES. MF 6.81Kohm 1/8W F A	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
501	RB21	0131-1212-1810	RES. MF 12.1Kohm 1/8W F A	
502	RB22	0130-3301-1850	RES. CF 3.3Kohm 1/8W J A	
503	RB23	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
504	RB24	0130-1000-1450	RES. CF 100ohm 1/4W J A	
505	RB25	0130-1000-1850	RES. CF 100ohm 1/8W J A	
506	RB26	0130-1000-1450	RES. CF 100ohm 1/4W J A	
507	RB27	0130-1000-1850	RES. CF 100ohm 1/8W J A	
508	RB28	0410-0000-2106	TRANSISTOR 2SA673AC TO-92 T	
509	RB29	0130-3301-1450	RES. CF 3.3Kohm 1/4W J A	
510	RB30	0130-1000-1450	RES. CF 100ohm 1/4W J A	
511	RB31	0130-1000-1850	RES. CF 100ohm 1/8W J A	
512	RB32	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
513	RB33	0130-1801-1850	RES. CF 1.8Kohm 1/8W J A	
514	RB34	0130-1000-1450	RES. CF 100ohm 1/4W J A	
515	RB35	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
516	RB36	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
517	RB37	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
518	RB38	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
519	RB39	0130-4700-1850	RES. CF 470ohm 1/8W J A	
520	RB40	0130-3308-1450	RES. CF 3.3ohm 1/4W J A	
521	RB41	0130-1501-1850	RES. CF 1.5Kohm 1/8W J A	
522	RB42	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
523	RB46	0130-4700-1450	RES. CF 470ohm 1/4W J A	
524	RB47	0132-2208-0252	RES. MOF 2.2ohm 2W J A-FK	
525	RB48	0132-2208-0252	RES. MOF 2.2ohm 2W J A-FK	
526	RB49	0130-1003-1850	RES. CF 100Kohm 1/8W J A	
527	RB50	0130-2201-1850	RES. CF 2.2Kohm 1/8W J A	
528	RB51	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
529	RB55	0130-3902-1450	RES. CF 39Kohm 1/4W J A	
530	RB56	0130-3902-1850	RES. CF 39Kohm 1/8W J A	
531	RC01	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
532	RC02	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
533	RC03	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
534	RC05	0130-2002-1850	RES. CF 20Kohm 1/8W J A	
535	RC10	0130-1005-1850	RES. CF 10Mohm 1/8W J A	
536	RC12	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
537	RC13	0130-1000-1450	RES. CF 100ohm 1/4W J A	
538	RC14	0130-1000-1450	RES. CF 100ohm 1/4W J A	
539	RC15	0130-1000-1450	RES. CF 100ohm 1/4W J A	
540	RC16	0130-4701-1450	RES. CF 4.7Kohm 1/4W J A	
541	RC21	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
542	RC22	0130-1000-1850	RES. CF 100ohm 1/8W J A	
543	RC23	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
544	RC24	0130-1000-1850	RES. CF 100ohm 1/8W J A	
545	RC25	0130-1000-1850	RES. CF 100ohm 1/8W J A	
546	RC26	0130-1000-1850	RES. CF 100ohm 1/8W J A	
547	RC27	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
548	RC30	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
549	RC31	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
550	RC32	0130-1000-1850	RES. CF 100ohm 1/8W J A	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
551	RC33	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
552	RC34	0130-1000-1850	RES. CF 100ohm 1/8W J A	
553	RC35	0130-1000-1850	RES. CF 100ohm 1/8W J A	
554	RC37	0130-1000-1850	RES. CF 100ohm 1/8W J A	
555	RC38	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
556	RC39	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
557	RC40	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
558	RC41	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
559	RC42	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
560	RC43	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
561	RC46	0130-1009-1850	RES. CF 10ohm 1/8W J A	
562	RC51	0130-4701-1450	RES. CF 4.7Kohm 1/4W J A	
563	RC52	0130-4701-1450	RES. CF 4.7Kohm 1/4W J A	
564	RC54	0130-1000-1450	RES. CF 100ohm 1/4W J A	
565	RC55	0130-1000-1850	RES. CF 100ohm 1/8W J A	
566	RC56	0130-1000-1450	RES. CF 100ohm 1/4W J A	
567	RC57	0130-1000-1450	RES. CF 100ohm 1/4W J A	
568	RC59	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
569	RC60	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
570	RC61	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
571	RC63	0130-1009-1450	RES. CF 10ohm 1/4W J A	
572	RC64	0130-1000-1450	RES. CF 100ohm 1/4W J A	
573	RC66	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
574	RC68	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
575	RC70	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
576	RC71	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
577	RC74	0130-4700-1850	RES. CF 470ohm 1/8W J A	
578	RC75	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
579	RC76	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
580	RC77	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
581	RC79	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
582	RC80	0130-4700-1850	RES. CF 470ohm 1/8W J A	
583	RC81	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
584	RC82	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
585	RC83	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
586	RC84	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
587	RE01	0130-3302-1450	RES. CF 33Kohm 1/4W J A	
588	RE02	0130-1003-1850	RES. CF 100Kohm 1/8W J A	
589	RE03	0130-1503-1850	RES. CF 150Kohm 1/8W J A	
590	RE07	0130-1800-1250	RES. CF 180ohm 1/2W J A	
591	RE08	0130-5109-1450	RES. CF 51ohm 1/4W J A	
592	RE09	0130-1202-1850	RES. CF 12Kohm 1/8W J A	
593	RE10	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
594	RE11	0130-7509-1250	RES. CF 75ohm 1/2W J A	
595	RE12	0130-3309-1450	RES. CF 33ohm 1/4W J A	
596	RE13	0130-3302-1850	RES. CF 33Kohm 1/8W J A	
597	RE14	0130-8202-1850	RES. CF 82Kohm 1/8W J A	
598	RE15	0130-1000-1250	RES. CF 100ohm 1/2W J A	
599	RE16	0130-5109-1850	RES. CF 51ohm 1/8W J A	
600	RE17	0130-3302-1450	RES. CF 33Kohm 1/4W J A	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
601	RE18	0130-1003-1850	RES. CF 100Kohm 1/8W J A	
602	RE19	0130-1800-1250	RES. CF 180ohm 1/2W J A	
603	RE20	0130-5109-1450	RES. CF 51ohm 1/4W J A	
604	RE21	0130-1102-1850	RES. CF 11Kohm 1/8W J A	
605	RE22	0130-1801-1850	RES. CF 1.8Kohm 1/8W J A	
606	RG01	0130-2402-1450	RES. CF 24Kohm 1/4W J A	
607	RG03	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
608	RG04	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
609	RG05	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
610	RG06	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
611	RG07	0130-4709-1850	RES. CF 47ohm 1/8W J A	
612	RG08	0130-7501-1850	RES. CF 7.5Kohm 1/8W J A	
613	RG09	0130-7502-1850	RES. CF 75Kohm 1/8W J A	
614	RG10	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
615	RG11	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
616	RG12	0130-4703-1850	RES. CF 470Kohm 1/8W J A	
617	RG13	0130-1502-1850	RES. CF 15Kohm 1/8W J A	
618	RG14	0130-8201-1850	RES. CF 8.2Kohm 1/8W J A	
619	RG15	0130-8201-1850	RES. CF 8.2Kohm 1/8W J A	
620	RG16	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
621	RG18	0130-4709-1850	RES. CF 47ohm 1/8W J A	
622	RG21	0130-4701-1450	RES. CF 4.7Kohm 1/4W J A	
623	RG22	0132-1509-0252	RES. MOF 15ohm 2W J A-FK	
624	RG23	0130-5109-1450	RES. CF 51ohm 1/4W J A	
625	RG24	0130-2402-1850	RES. CF 24Kohm 1/8W J A	
626	RG26	0130-2702-1850	RES. CF 27Kohm 1/8W J A	
627	RG27	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
628	RG28	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
629	RG29	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
630	RG30	0130-1002-1450	RES. CF 10Kohm 1/4W J A	
631	RG31	0130-4700-1450	RES. CF 470ohm 1/4W J A	
632	RG32	0133-6802-0152	RES. MOF(M) 68Kohm 1W J A-FK	
633	RG33	0130-2201-1850	RES. CF 2.2Kohm 1/8W J A	
634	RG34	0130-1003-1450	RES. CF 100Kohm 1/4W J A	
635	RG36	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
636	RG37	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
637	RG38	0130-1504-1850	RES. CF 1.5Mohm 1/8W J A	
638	RG39	0130-2202-1850	RES. CF 22Kohm 1/8W J A	
639	RG40	0130-1504-1850	RES. CF 1.5Mohm 1/8W J A	
640	RG41	0130-3003-1850	RES. CF 300Kohm 1/8W J A	
641	RG42	0130-3301-1850	RES. CF 3.3Kohm 1/8W J A	
642	RG43	0130-3901-1850	RES. CF 3.9Kohm 1/8W J A	
643	RG44	0130-3301-1850	RES. CF 3.3Kohm 1/8W J A	
644	RG45	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
645	RG46	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
646	RG47	0130-3001-1850	RES. CF 3.0Kohm 1/8W J A	
647	RG50	0130-2001-1850	RES. CF 2.0Kohm 1/8W J A	
648	RG51	0130-1503-1250	RES. CF 150Kohm 1/2W J A	
649	RG52	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
650	RG53	0130-1801-1850	RES. CF 1.8Kohm 1/8W J A	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
651	RG54	0130-4709-1850	RES. CF 47ohm 1/8W J A	
652	RG55	0130-2002-1450	RES. CF 20Kohm 1/4W J A	
653	RG56	0130-1009-1850	RES. CF 10ohm 1/8W J A	
654	RG57	0130-1009-1850	RES. CF 10ohm 1/8W J A	
655	RG58	0130-1009-1450	RES. CF 10ohm 1/4W J A	
656	RG59	0130-3602-1450	RES. CF 36Kohm 1/4W J A	
657	RG60	0130-1501-1850	RES. CF 1.5Kohm 1/8W J A	
658	RG61	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
659	RG62	0130-1009-1850	RES. CF 10ohm 1/8W J A	
660	RG63	0130-3300-1850	RES. CF 330ohm 1/8W J A	
661	RG64	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
662	RG65	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
663	RG66	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
664	RG69	0130-1803-1850	RES. CF 180Kohm 1/8W J A	
665	RG70	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
666	RG71	0133-1800-0152	RES. MOF(M) 180ohm 1W J A-FK	
667	RG72	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
668	RG74	0130-3901-1850	RES. CF 3.9Kohm 1/8W J A	
669	RH01	0130-1202-1850	RES. CF 12Kohm 1/8W J A	
670	RH02	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
671	RH03	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
672	RH03T	0242-0225-2004	HEAT S-T 2.0*0.25 20mm 125'	
673	RH03W	0460-2001-0030	WH 1007#24 80mm BLUE T/C	
674	RH04	0130-6801-1850	RES. CF 6.8Kohm 1/8W J A	
675	RH05	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
676	RH08	0130-1003-1850	RES. CF 100Kohm 1/8W J A	
677	RH09	0130-1001-1450	RES. CF 1.0Kohm 1/4W J A	
678	RH10	0131-3240-1214	RES. MF 324ohm 1/2W F R-K	
679	RH100	0130-2209-1850	RES. CF 22ohm 1/8W J A	
680	RH101	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
681	RH11	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
682	RH12	0130-5101-1850	RES. CF 5.1Kohm 1/8W J A	
683	RH13	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
684	RH15	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
685	RH16	0130-3301-1850	RES. CF 3.3Kohm 1/8W J A	
686	RH17	0130-6801-1850	RES. CF 6.8Kohm 1/8W J A	
687	RH18	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
688	RH19	0130-3301-1850	RES. CF 3.3Kohm 1/8W J A	
689	RH20	0130-3309-1850	RES. CF 33ohm 1/8W J A	
690	RH21	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
691	RH22	0130-6801-1450	RES. CF 6.8Kohm 1/4W J A	
692	RH23	0130-1502-1450	RES. CF 15Kohm 1/4W J A	
693	RH24	0130-3302-1850	RES. CF 33Kohm 1/8W J A	
694	RH25	0130-9101-1850	RES. CF 9.1Kohm 1/8W J A	
695	RH26	0130-5101-1850	RES. CF 5.1Kohm 1/8W J A	
696	RH27	0130-8202-1850	RES. CF 82Kohm 1/8W J A	
697	RH28	0130-9102-1850	RES. CF 91Kohm 1/8W J A	
698	RH29	0130-8202-1450	RES. CF 82Kohm 1/4W J A	
699	RH30	0130-3309-1850	RES. CF 33ohm 1/8W J A	
700	RH31	0130-4709-1850	RES. CF 47ohm 1/8W J A	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
701	RH32	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
702	RH33	0130-5601-1850	RES. CF 5.6Kohm 1/8W J A	
703	RH34	0132-2208-0252	RES. MOF 2.2ohm 2W J A-FK	
704	RH35	0130-3302-1850	RES. CF 33Kohm 1/8W J A	
705	RH36	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
706	RH37	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
707	RH38	0130-3900-1850	RES. CF 390ohm 1/8W J A	
708	RH39	0130-3900-1850	RES. CF 390ohm 1/8W J A	
709	RH40	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
710	RH42	0130-4702-1450	RES. CF 47Kohm 1/4W J A	
711	RH43	0133-2200-0152	RES. MOF(M) 220ohm 1W J A-FK	
712	RH44	0130-1000-1850	RES. CF 100ohm 1/8W J A	
713	RH45	0132-1509-0252	RES. MOF 15ohm 2W J A-FK	
714	RH46	0130-2003-1850	RES. CF 200Kohm 1/8W J A	
715	RH47	0130-3602-1850	RES. CF 36Kohm 1/8W J A	
716	RH48	0130-1000-1850	RES. CF 100ohm 1/8W J A	
717	RH49	0130-3002-1450	RES. CF 30Kohm 1/4W J A	
718	RH50	0130-2201-1850	RES. CF 2.2Kohm 1/8W J A	
719	RH51	0130-2709-1450	RES. CF 27ohm 1/4W J A	
720	RH52	0133-0828-0552	RES. MOF(M) 0.82ohm 5W J A-FK	
721	RH53	0130-4700-1250	RES. CF 470ohm 1/2W J A	
722	RH54	0132-4708-0250	RES. MOF 4.7ohm 2W J A	
723	RH55	0130-1000-1850	RES. CF 100ohm 1/8W J A	
724	RH56	0130-1203-1850	RES. CF 120Kohm 1/8W J A	
725	RH57	0130-2403-1850	RES. CF 240Kohm 1/8W J A	
726	RH58	0130-5103-1850	RES. CF 510Kohm 1/8W J A	
727	RH60	0130-3303-1850	RES. CF 330Kohm 1/8W J A	
728	RH61	0130-1503-1850	RES. CF 150Kohm 1/8W J A	
729	RH62	0131-1503-1810	RES. MF 150Kohm 1/8W F A	
730	RH63	0130-4709-1450	RES. CF 47ohm 1/4W J A	
731	RH64	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
732	RH65	0130-2202-1450	RES. CF 22Kohm 1/4W J A	
733	RH66	0130-2202-1450	RES. CF 22Kohm 1/4W J A	
734	RH67	0130-2202-1450	RES. CF 22Kohm 1/4W J A	
735	RH68	0130-2202-1450	RES. CF 22Kohm 1/4W J A	
736	RH69	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
737	RH70	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
738	RH71	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
739	RH72	0130-2202-1850	RES. CF 22Kohm 1/8W J A	
740	RH74	0130-1009-1850	RES. CF 10ohm 1/8W J A	
741	RH75	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
742	RH76	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
743	RH77	0133-1009-0352	RES. MOF(M) 10ohm 3W J A-FK	
744	RH78	0130-1009-1450	RES. CF 10ohm 1/4W J A	
745	RH79	0132-4709-0254	RES. MOF 47ohm 2W J R-K	
746	RH80	0132-1509-0254	RES. MOF 15ohm 2W J R-K	
747	RH81	0230-5008-0000	JUMPER WIRE 5.0*0.6mm	
748	RH82	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
749	RH83	0130-1003-1850	RES. CF 100Kohm 1/8W J A	
750	RH84	0130-1000-1850	RES. CF 100ohm 1/8W J A	

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751	RH85	0132-1509-0254	RES. MOF 15ohm 2W J R-K	
752	RH86	0130-4702-1850	RES. CF 47Kohm 1/8W J A	
753	RH87	0130-1002-1850	RES. CF 10Kohm 1/8W J A	
754	RH88	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
755	RH90	0130-1000-1250	RES. CF 100ohm 1/2W J A	
756	RH91	0130-4701-1850	RES. CF 4.7Kohm 1/8W J A	
757	RH92	0130-3301-1850	RES. CF 3.3Kohm 1/8W J A	
758	RH93	0130-1001-1850	RES. CF 1.0Kohm 1/8W J A	
759	RH94	0132-1000-0254	RES. MOF 100ohm 2W J R-K	
760	RH95	0130-5602-1850	RES. CF 56Kohm 1/8W J A	
761	RH96	0131-3012-1810	RES. MF 30.1Kohm 1/8W F A	
762	RH97	0130-1009-1850	RES. CF 10ohm 1/8W J A	
763	RH99	0130-5103-1850	RES. CF 510Kohm 1/8W J A	
764	RLA01	0252-1250-2012	RELAY 2POLES 250V/5A/12Vdc ST	
765	SWA01	0451-3963-0154	WAFER 3.96mm 3P-1 180'	
766	SWA01B	1712-0100-0470	AC BRACKET AT1099DA	
767	TA01	0352-0200-0010	LINE FILTER BF-28 15mH-15mH	
768	TA02	0350-0419-0030	X'FMR EEL19 5.5mH AT1099DA	
769	TA03	0350-0242-0060	X'FMR EE4215 105uH	
770	TA04	0353-0600-0010	X'FMR SYNC UU10.5 1.75-1.75mH	
771	TG01	0480-0000-0050	F.B.T. 26KV 3000PF (CF1043B) AT398HA	
772	TG01S	1724-2603-1002	SCREW,BTCW,M3.0x10L,Zn-Cc	
773	TG02	0351-0125-0020	X'FMR EI25 24:240 Ts	
774	TH01	0351-0200-0010	X'FMR EE19 2.4mH-2.4mH	
775	TH02	0351-0213-0010	X'FMR EE13 35mH 250:1	
776	TH03	0351-0122-0010	X'FMR DRIVE EI22 2mH-80uH	
777	THA01	0160-5094-0920	THERMISTOR 5ohm 4A	
778	THA03	0160-5094-0920	THERMISTOR 5ohm 4A	
779	THA04	0161-1403-0130	POSISTOR 14ohm 30A 3P	
780	VRA01	0151-2013-1101	SVR M/STAND/B 200ohm B 8	
781	VRG01	0151-2223-1001	SVR M/STAND/B 2.2Kohm B 6	
782	VRH01	0151-2023-1101	SVR M/STAND/B 2Kohm B 8	
783	VRH02	0151-2023-1001	SVR M/STAND/B 2Kohm B 6	
784	WA01	0262-0000-0012	AC SOCKET 0714C PCB TYPE	
785	WA01S	1724-2603-1002	SCREW,BTCW,M3.0x10L,Zn-Cc	
786	WA01W	0460-1701-0040	WH SRA4.3@ 150mm 1015#18 G/Y	
787	WA02	0451-1000-0294	WAFER 10mm 2P/WHITE	
788	WA03	0460-1110-0031	WH XH10P-SCN10P 1007#24 350mm	
789	WB01	0460-1108-0011	WH JAM8-XH8P 1007#24 300mm	
790	WC01	0300-1200-3150	D-SUB Female 90' 15P 3ROW	
791	WC02	0451-2500-0614	WAFER 2.50mm 6P 180' Kink	
792	WC03	0451-2500-0444	WAFER 2.50mm 4P 90' Kink	
793	WC05	0460-1105-0032	WH XH6P-SCN6P 2919 140mm	
794	WC06	0459-2540-0277	PIN HEADER 2.54mm2P 180'11.6mm	
795	WC07	0460-1104-0040	WH XH4P-SCN4P 1007#24 230mm	
796	WE01	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
797	WE02	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
798	WE03	0451-2500-0214	WAFER 2.50mm 2P 180' Kink	
799	WE04	0451-2500-0314	WAFER 2.50mm 3P 180' Kink	
800	WG01	0459-2540-0277	PIN HEADER 2.54mm2P 180'11.6mm	

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ITEM	LOC	PART NO	DESCRIPTION	REMARK
801	WH05	0451-3960-0654	WAFER 3.96mm 6P 180'	
802	WH07	0451-3960-0354	WAFER 3.96mm 3P 180'	
803	XTAC01	0280-0400-0013	X'TAL 4MHz	
804	ZDA01	0400-1751-2000	ZENER 18-2 17.5-18.3V 1/2W	
805	ZDA02	0400-1191-2000	ZENER 12A2 11.9-12.4V 1/2W	
806	ZDA03	0400-1951-2000	ZENER 20-2 19.5-20.4V 1/2W	
807	ZDC02	0400-0581-2000	ZENER 6C1 5.8-6.1V 1/2W	
808	ZDC03	0400-0581-2000	ZENER 6C1 5.8-6.1V 1/2W	
809	ZDC04	0400-0581-2000	ZENER 6C1 5.8-6.1V 1/2W	
810	ZDC05	0400-0581-2000	ZENER 6C1 5.8-6.1V 1/2W	
811	ZDC06	0400-0581-2000	ZENER 6C1 5.8-6.1V 1/2W	
812	ZDC07	0400-0581-2000	ZENER 6C1 5.8-6.1V 1/2W	
813	ZDG03	0400-1191-2000	ZENER 12A2 11.9-12.4V 1/2W	
814	ZDH01	0400-1261-2000	ZENER 12B2 12.6-13.1V 1/2W	
815	ZDH03	0400-0891-2000	ZENER 9C1 8.9-9.3V 1/2W	

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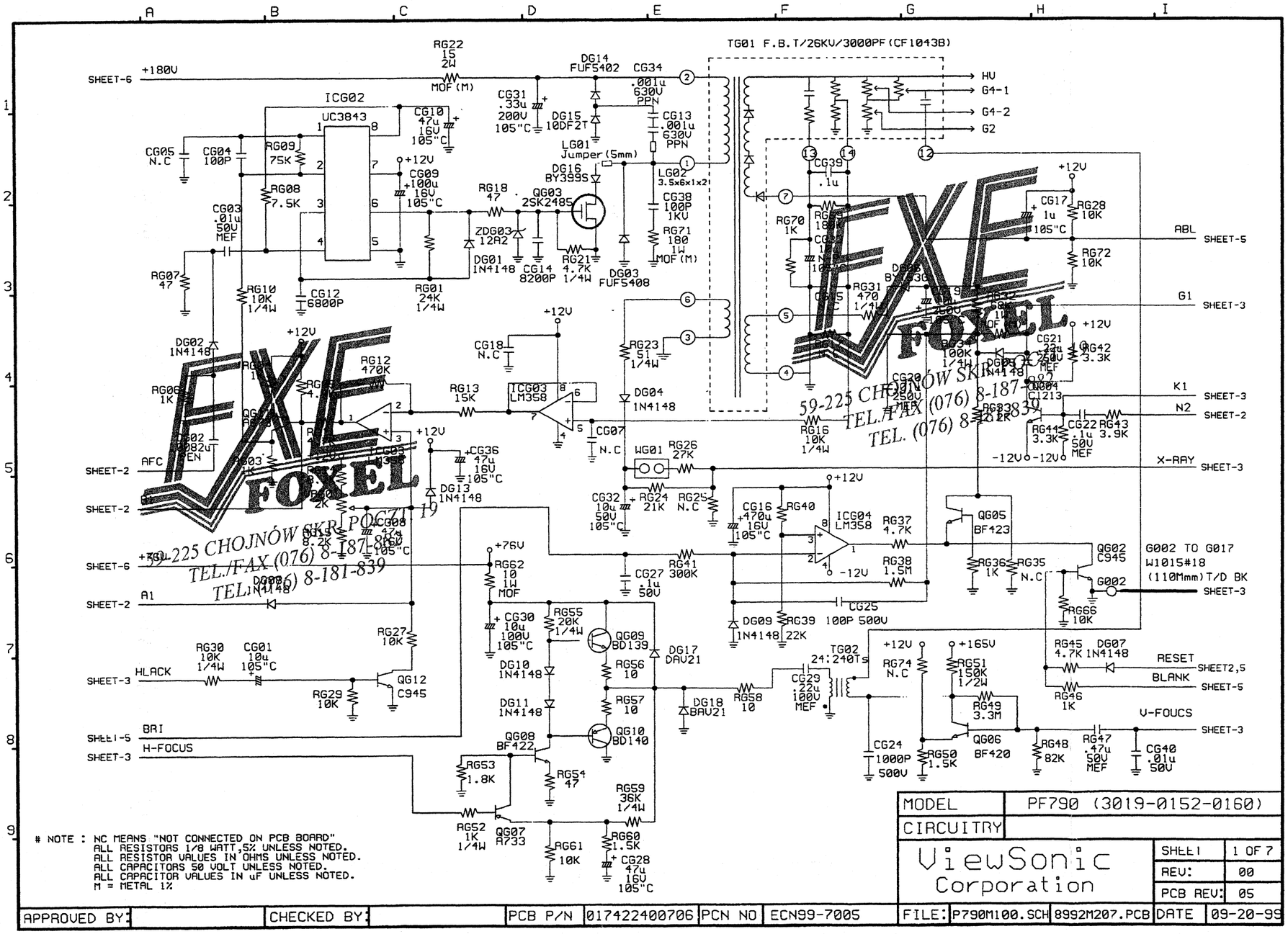
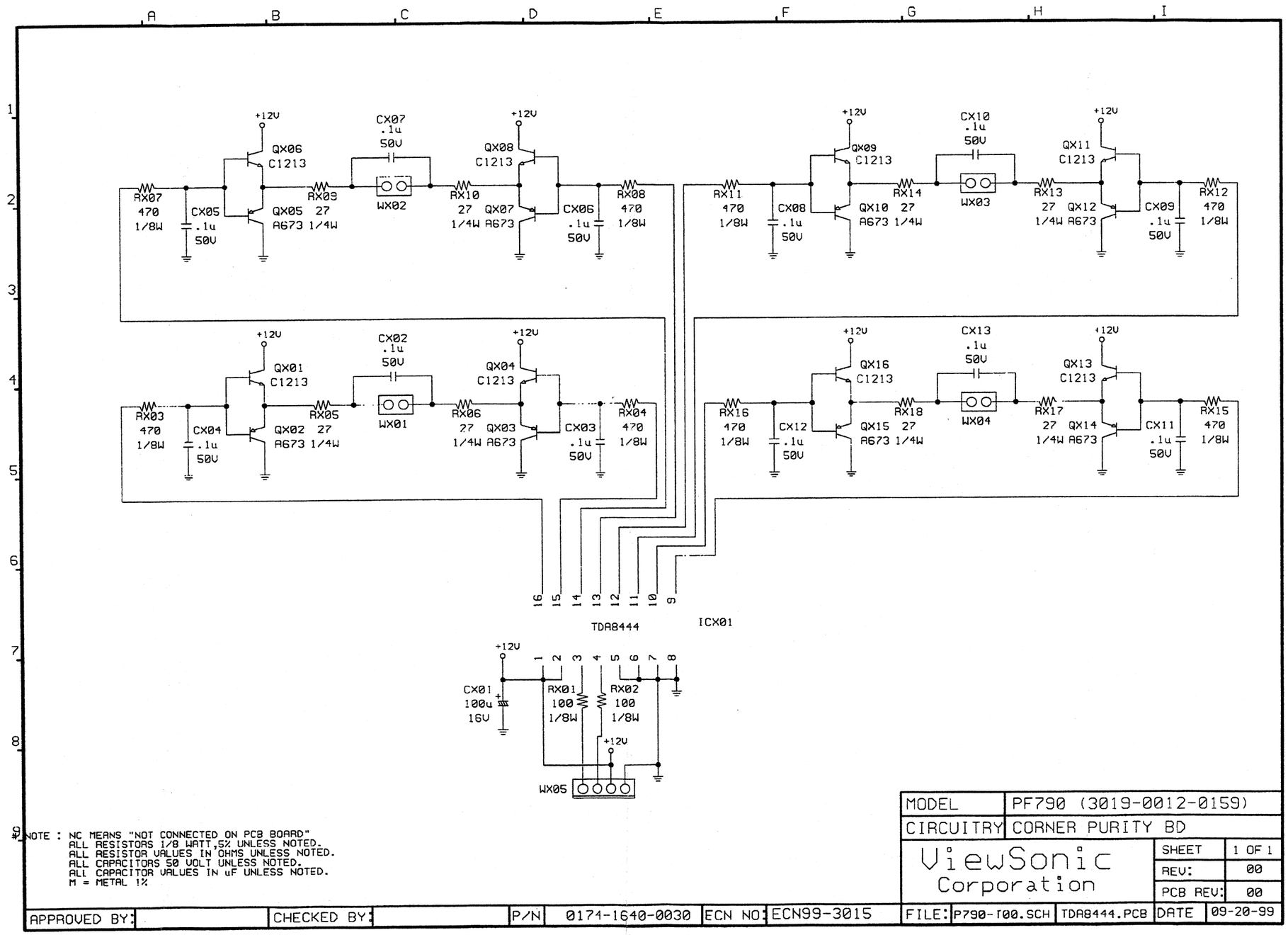


NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
ALL RESISTORS 1/8 WATT,5% UNLESS NOTED.
ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
ALL CAPACITOR VALUES IN uF UNLESS NOTED.
M = METAL 1%

APPROVED BY:		CHECKED BY:		PCB P/N	017422400706	PCN NO	ECN99-7005	FILE:	P790M100.SCH 8992M207.PCB

MODEL	PF790 (3019-0152-0160)
CIRCUITRY	
ViewSonic Corporation	SHEET 1 OF 7
	REV: 00
	PCB REV: 05
	DATE 09-20-99

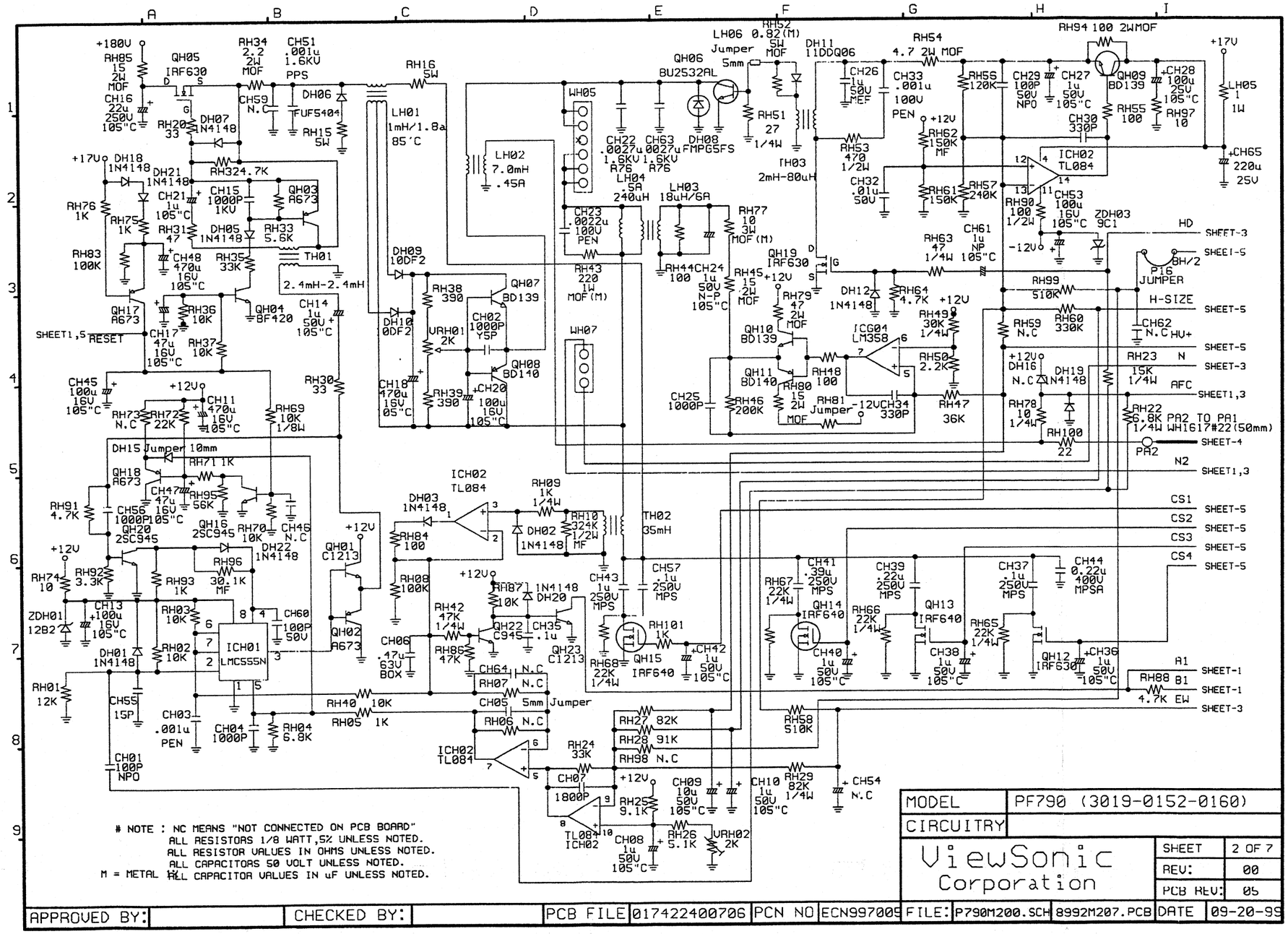


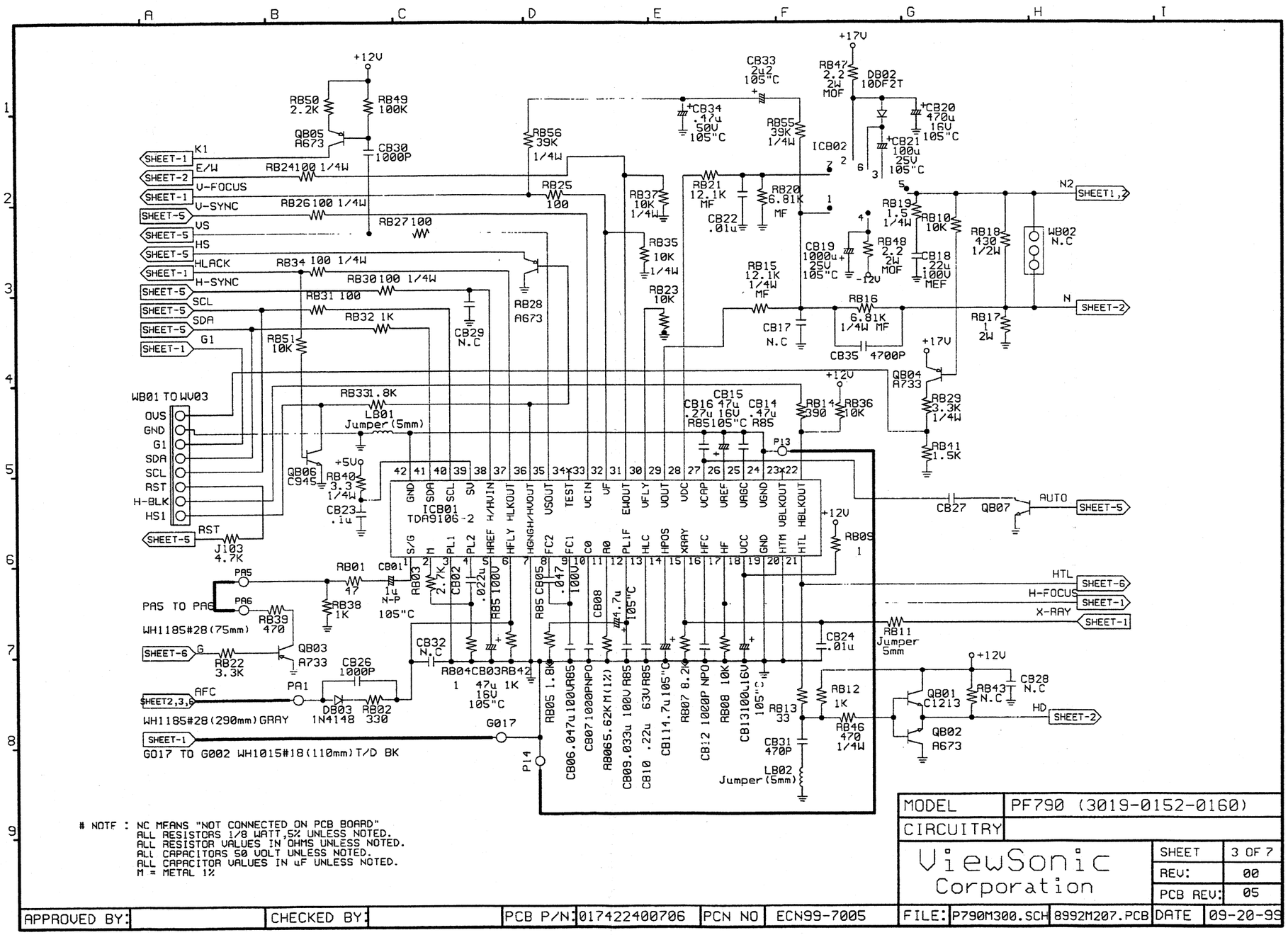
NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
ALL RESISTORS 1/8 WATT,5% UNLESS NOTED.
ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
ALL CAPACITOR VALUES IN uF UNLESS NOTED.
M = METAL 1%

APPROVED BY:		CHECKED BY:		P/N	0174-1640-0030	ECN NO:	ECN99-3015	FILE:	P790-T00.SCH	TDA8444.PCB

MODEL	PF790 (3019-0012-0159)		
CIRCUITRY	CORNER PURITY BD		
ViewSonic Corporation		SHEET	1 OF 1
		REV:	00
		PCB REV:	00
		DATE	09-20-99

Confidential - Do Not Copy


+180V
RH85 15 2W MOF
CH16 22u 250V 105"C
QH05 IRF630
RH34 2.2 2W MOF
CH51 .001u 1.6KV
PPS
CH59 N.C
DH06 FUF5404
RH15 5W
RH16 5W
RH20 33
DH07 1N4148
LH01 1mH/1.8a 85'C
LH02 7.0mH .45A
+17V
DH18 1N4148
DH21 1N4148
RH324.7K
CH21 1u 105"C
CH15 1000P 1KV
QH03 A673
RH76 1K
RH75 1K
RH31 47
DH05 1N4148
RH33 5.6K
RH83 100K
CH48 470u 16V 105"C
RH35 33K
TH01
2.4mH-2.4mH
QH17 A673
RH36 10K
QH04 BF420
CH14 1u 50V 105"C
SHEET1,5 RESET
CH17 47u 16V 105"C
RH37 10K
CH45 100u 16V 105"C
+12V
RH73 N.C
RH72 22K
CH11 470u 16V 105"C
RH69 10K 1/8W
RH30 33
DH15 Jumper 10mm
RH71 1K
QH18 A673
CH47 47u 16V 105"C
RH95 56K
RH91 4.7K
CH56 1000P 105"C
QH20 2SC945
QH19 2SC945
RH70 10K
CH46 N.C
DH22 1N4148
RH96 30.1K MF
+12V
RH74 10
RH92 3.3K
RH93 1K
ZDH01 12B2
CH13 +100u 16V 105"C
RH03 10K
RH02 10K
DH01 1N4148
ICH01 LMC555N
CH60 100P 50V
RH01 12K
CH55 15P
CH03 .001u PEN
CH04 1000P
RH04 6.8K
CH01 100P NPO
RH40 10K
RH05 1K
QH01 C1213
QH02 A673
DH09 10DF2
DH10 0DF2
RH38 390
QH07 BD139
VRH01 2K
CH02 1000P YSP
QH08 BD140
RH39 390
+CH20 100u 16V 105"C
CH18 470u 16V 05"C
WH05
WH07
CH22 .0027u 1.6KV R76
CH63 .0027u 1.6KV R76
QH06 BU2532AL
DH08 FMPG5FS
LH06 0.82(M) 5W MOF
Jumper 5mm
RH51 27 1/4W
TH03 2mH-80uH
LH04 .5A 240uH
LH03 18uH/6A
CH23 .0022u 100V PEN
RH43 220 1W MOF(M)
RH44 100
CH24 1u 50V N-P 105"C
RH77 10 3W MOF(M)
RH45 15 .2W MOF
+12V
RH79 47 2W MOF
QH10 BD139
QH11 BD140
RH48 100
RH80 15 2W MOF
CH25 1000P
RH46 200K
RH81 Jumper
-12V
CH34 330P
RH47 36K
DH11 11DQ06
CH26 1u 50V MEF
CH33 .001u 100V PEN
RH54 4.7 2W MOF
RH53 470 1/2W
RH52 Jumper
RH55 120K
RH62 150K MF
RH61 150K
RH57 240K
CH32 .01u 50V
CH29 100P 50V NPO
CH27 1u 50V 105"C
RH94 100 2WMOF
QH09 BD139
+CH28 100u 25V 105"C
RH55 100
RH97 10
CH30 330P
+17V
LH05 1 1W
+CH65 220u 25V
ICH02 TL084
RH90 100 1/2W
CH53 100u 16V 105"C
ZDH03 9C1
-12V
CH61 1u NP 105"C
RH63 47 1/4W
DH12 1N4148
RH64 4.7K
QH19 IRF630
RH49 30K 1/4W
ICG01 LM358
RH50 2.2K
RH99 510K
RH60 330K
RH59 N.C
CH62 N.C
P16 JUMPER
BH/2
H-SIZE
HD
SHEET-3
SHEET-5
HU+
N
AFC
RH23 15K 1/4W
DH16 N.C
DH19 1N4148
RH78 10 1/4W
RH100 22
RH22 6.8K PA2 TO PA1 1/4W WH1617#22(50mm)
PA2
N2
SHEET-4
SHEET1,3
CS1
CS2
CS3
CS4
ICH02 TL084
RH09 1K 1/4W
DH03 1N4148
DH02 1N4148
RH10 324K 1/2W MF
TH02 35mH
RH84 100
RH08 100K
CH43 1u 250V MPS
CH57 .1u 250V MPS
RH87 10K
1N4148 DH20
RH42 47K 1/4W
QH22 C945
CH35 .1u
QH23 C1213
RH86 47K
CH06 .47u 63V BOX
CH64 N.C
RH07 N.C
CH05 5mm Jumper
RH06 N.C
RH101 1K
QH15 IRF640
RH68 22K 1/4W
+CH42 1u 50V 105"C
CH41 39u 250V MPS
RH67 22K 1/4W
QH14 IRF640
CH39 .22u 250V MPS
RH66 22K 1/4W
QH13 IRF640
CH37 .1u 250V MPS
RH65 22K 1/4W
CH44 0.22u 400V MPSA
CH40 1u 50V 105"C
CH38 1u 50V 105"C
QH12 IRF630
+CH36 1u 50V 105"C
A1
RH88 B1
4.7K EW
RH58 510K
RH27 82K
RH28 91K
RH98 N.C
RH24 33K
CH07 1800P
RH25 9.1K
TL08 ICH02
CH08 1u 50V 105"C
RH26 5.1K
VRH02 2K
CH09 10u 50V 105"C
CH10 1u 50V 105"C
RH29 82K 1/4W
+CH54 N.C
NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
ALL RESISTORS 1/8 WATT,5% UNLESS NOTED.
ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
M = METAL ALL CAPACITOR VALUES IN uF UNLESS NOTED.
MODEL PF790 (3019-0152-0160)
CIRCUITRY
ViewSonic Corporation
SHEET 2 OF 7
REV: 00
PCB REV: 05
APPROVED BY:
CHECKED BY:
PCB FILE 017422400706
PCN NO ECN997009
FILE: P790M200.SCH 8992M207.PCB
DATE 09-20-99



NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
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ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
ALL CAPACITOR VALUES IN uF UNLESS NOTED.
M = METAL 1%

APPROVED BY:		CHECKED BY:		PCB P/N:	017422400706	PCN NO	ECN99-7005	FILE:	P790M300.SCH 8992M207.PCB

MODEL	PF790 (3019-0152-0160)
CIRCUITRY	
ViewSonic Corporation	SHEET 3 OF 7
	REV: 00
	PCB REV: 05
	DATE 09-20-99

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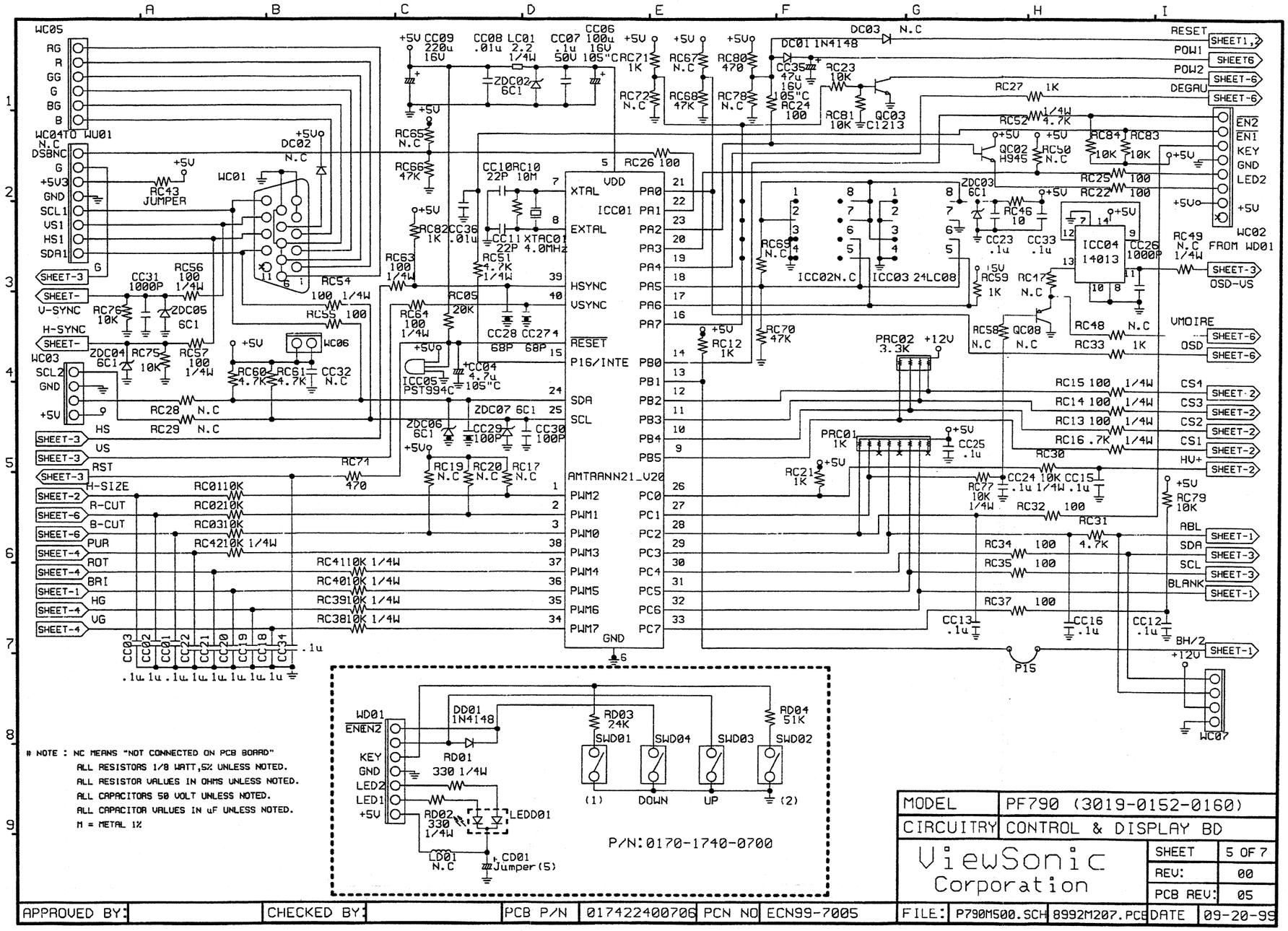
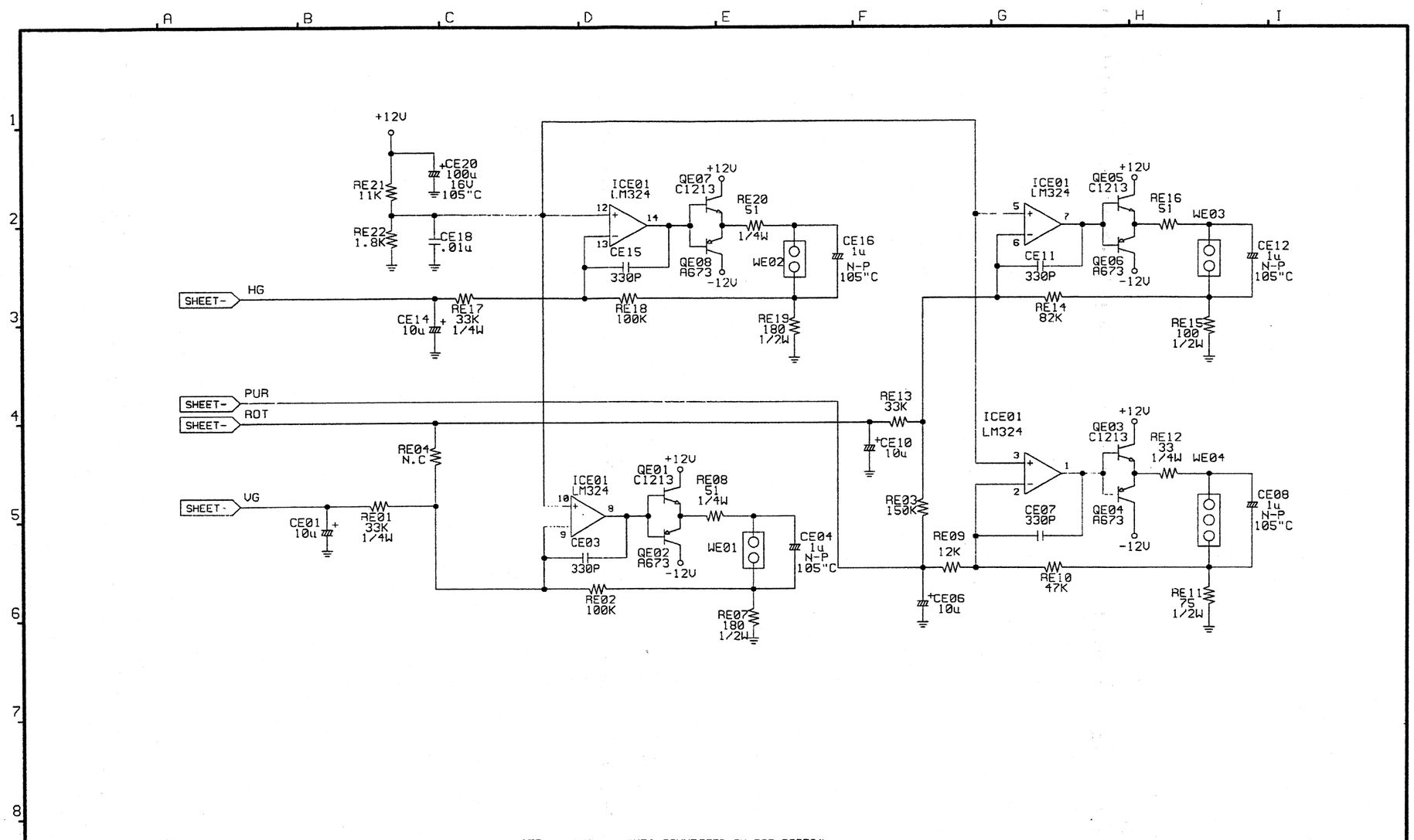

WC05
RG
R
GG
G
BG
B
WC04TO WU01
N.C
DSBNC
G
+5V3
GND
SCL1
VS1
HS1
SDA1
SHEET-3
SHEET-
V-SYNC
H-SYNC
SHEET-
WC03
SCL2
GND
+5V
HS
VS
RST
H-SIZE
R-CUT
B-CUT
PUR
ROT
BRI
HG
VG
RC43 JUMPER
WC01
DC02 N.C
RC56 100 1/4W
CC31 1000P
RC76 10K
ZDC05 6C1
RC57 100 1/4W
ZDC04 6C1
RC75 10K
RC54 100 1/4W
RC55 100
WC06
RC60 4.7K
RC61 4.7K
CC32 N.C
RC28 N.C
RC29 N.C
CC09 220u 16V
CC08 .01u
LC01 2.2 1/4W
CC07 .1u 50V
CC06 100u 16V 105"C
ZDC02 6C1
RC65 N.C
RC66 47K
RC82 1K
CC36 .01u
RC63 100 1/4W
RC64 100 1/4W
RC05 20K
CC10 22P
RC10 10M
CC11 22P
XTAC01 4.0MHz
RC51 1.2K 1/4W
CC28 68P
CC27 68P
ICC05 PST994C
CC04 4.7u 105"C
ZDC06 6C1
ZDC07 6C1
CC29 100P
CC30 100P
RC74 470
RC19 N.C
RC20 N.C
RC17 N.C
RC01 10K
RC02 10K
RC03 10K
RC04 10K 1/4W
RC41 10K 1/4W
RC40 10K 1/4W
RC39 10K 1/4W
RC38 10K 1/4W
CC03 CC02 CC01 CC22 CC21 CC20 CC19 CC18 CC34 .1u
RC26 100
ICC01 AMTRANN21_V20
VDD
XTAL
EXTAL
HSYNC
VSYNC
RESET
P16/INTE
SDA
SCL
PWM2
PWM1
PWM0
PWM3
PWM4
PWM5
PWM6
PWM7
GND
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0
PB1
PB2
PB3
PB4
PB5
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
RC71 1K
RC67 N.C
RC80 470
RC72 N.C
RC68 47K
RC78 N.C
DC01 1N4148
DC03 N.C
CC35 47u 16V 105"C
RC24 100
RC23 10K
RC81 10K
QC03 C1213
RC12 1K
RC70 47K
PRC02 3.3K +12V
PRC01 1K
RC21 1K
CC25 .1u
RC27 1K
RC52 4.7K 1/4W
QC02 H945
RC50 N.C
RC84 10K
RC83 10K
RC25 100
RC22 100
ZDC03 6C1
RC46 10
CC23 .1u
CC33 .1u
ICC04 14013
CC26 1000P
RC49 N.C 1/4W
RC69 N.C
ICC02N.C
ICC03 24LC08
RC59 1K
RC17 N.C
RC58 N.C
QC08 N.C
RC48 N.C
RC33 1K
RC15 100 1/4W
RC14 100 1/4W
RC13 100 1/4W
RC16 .7K 1/4W
RC30
RC32 100
RC31
RC34 100
RC35 100
RC37 100
4.7K
RC77 10K 1/4W
CC24 10K
CC15 .1u 1/4W .1u
RC79 10K
CC13 .1u
CC16 .1u
CC12 .1u
P15
BH/2
+12V
WC07
RESET
POW1
POW2
DEGAU
EN2
EN1
KEY
GND
LED2
WC02 FROM WD01
OSD-VS
VMOIRE
OSD
CS4
CS3
CS2
CS1
HV+
ABL
SDA
SCL
BLANK
SHEET1,2
SHEET6
SHEET-6
SHEET-3
SHEET-2
SHEET-1
WD01
EN2
KEY
GND
LED2
LED1
+5V
DD01 1N4148
RD01 330 1/4W
RD02 330 1/4W
LEDD01
LD01 N.C
CD01 Jumper(5)
RD03 24K
RD04 51K
SWD01
SWD04
SWD03
SWD02
(1)
DOWN
UP
(2)
P/N:0170-1740-0700
NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
ALL RESISTORS 1/8 WATT,5% UNLESS NOTED.
ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
ALL CAPACITOR VALUES IN uF UNLESS NOTED.
M = METAL 1%
MODEL PF790 (3019-0152-0160)
CIRCUITRY CONTROL & DISPLAY BD
ViewSonic Corporation
SHEET 5 OF 7
REV: 00
PCB REV: 05
APPROVED BY:
CHECKED BY:
PCB P/N 017422400706
PCN NO ECN99-7005
FILE: P790M500.SCH 8992M207.PCB
DATE 09-20-99



NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
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ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
ALL CAPACITOR VALUES IN uF UNLESS NOTED.
M = METAL 1%

APPROVED BY:		CHECKED BY:		PCB P/N	0174-2240-0706	ECN NO	ECN99-7005	FILE:	P790M400.SCH 8992M207.PCB

MODEL	PF790 (3019-0152-0160)
CIRCUITRY	CONVERGENCE &TCO
ViewSonic Corporation	SHEET 4 OF 7
	REV: 00
	PCB REV: 05
	DATE 09-20-99

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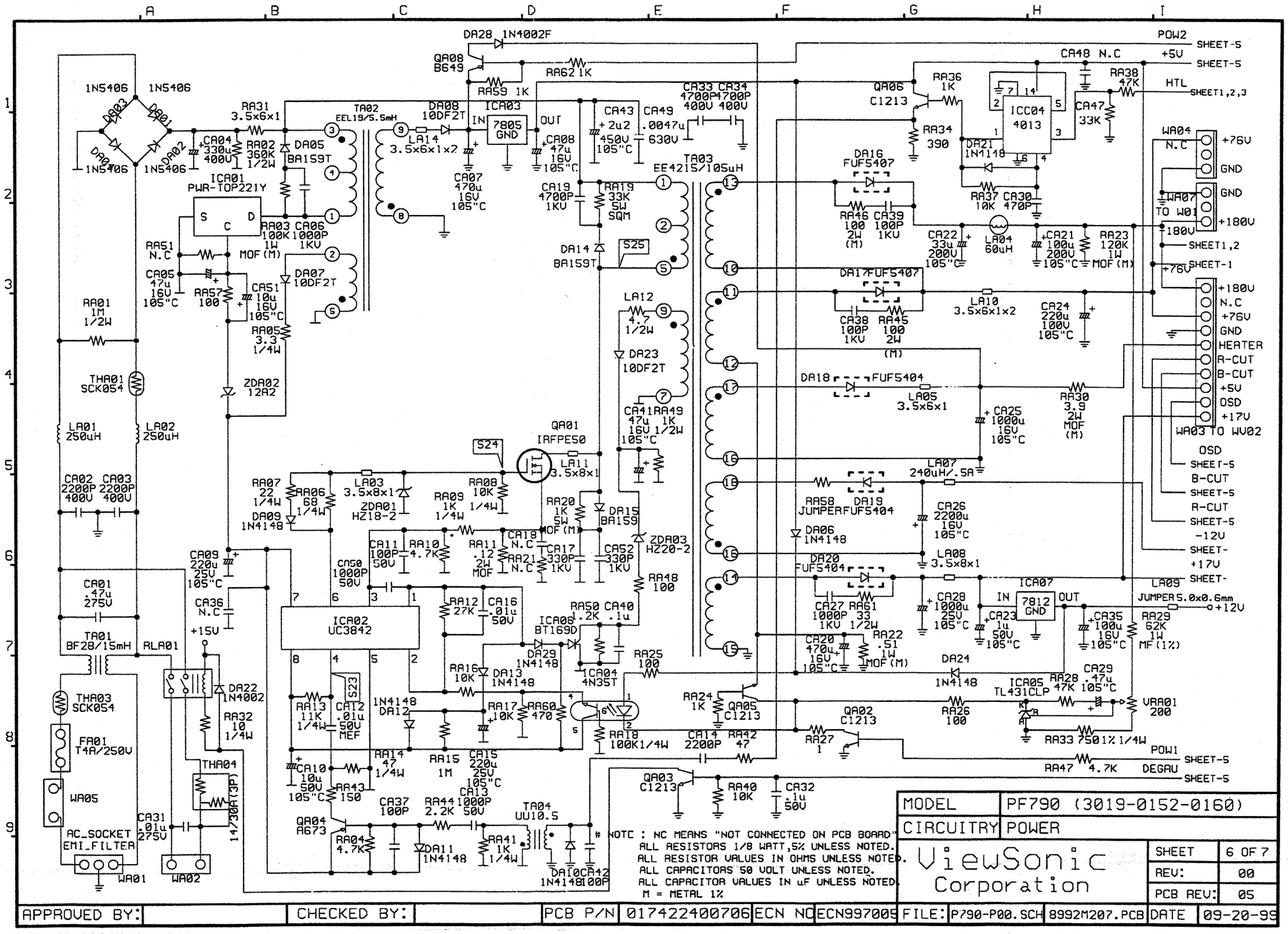
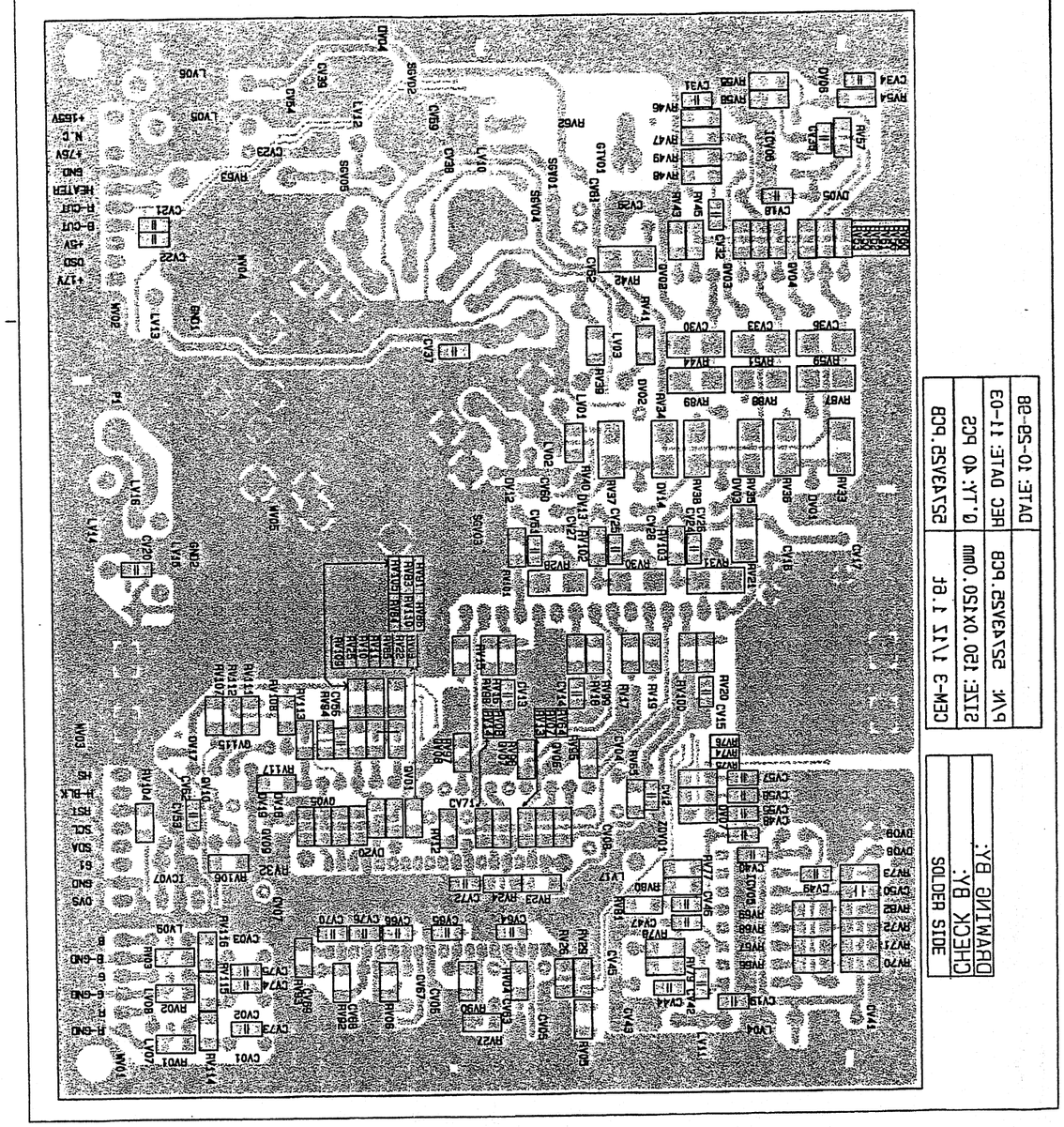

1N5406
DA03
DA01
DA04
DA02
1N5406
1N5406
RA31 3.5x6x1
CA04 330u 400V
RA02 360K 1/2W
DA05 BA159T
ICA01 PWR-TOP221Y
S C D
RA03 100K 1W
CA06 1000P 1KV
RA51 N.C
MOF(M)
CA05 47u 16V 105"C
RA57 100
CA51 10u 16V 105"C
RA05 3.3 1/4W
DA07 10DF2T
TA02 EEL19/5.5mH
RA01 1M 1/2W
THA01 SCK054
ZDA02 12A2
LA01 250uH
LA02 250uH
CA02 2200P 400V
CA03 2200P 400V
CA01 .47u 275V
TA01 BF28/15mH
RLA01
THA03 SCK054
FA01 T4A/250V
WA05
AC_SOCKET EMI_FILTER
CA31 .01u 275V
WA01
WA02
THA04 14/30A(3P)
DA22 1N4002
RA32 10 1/4W
CA09 220u 25V 105"C
CA36 N.C
+15V
ICA02 UC3842
RA13 11K 1/4W
CA12 .01u 50V MEF
S23
RA14 47 1/4W
CA10 10u 50V 105"C
RA43 150
QA04 A673
CA37 100P
RA44 2.2K
CA13 1000P 50V
DA11 1N4148
RA04 4.7K
RA41 1K 1/4W
TA04 UU10.5
DA10 1N4148
CA42 100P
DA28 1N4002F
QA08 B649
RA62 1K
RA59 1K
DA08 10DF2T
ICA03 7805 GND
IN OUT
CA43 2u2 450V 105"C
CA49 .0047u 630V
CA33 4700P 400V
CA34 4700P 400V
LA14 3.5x6x1x2
CA07 470u 16V 105"C
CA08 47u 16V 105"C
TA03 EE42IS/105uH
CA19 4700P 1KV
RA19 33K 5W SQM
DA14 BA159T
S25
LA12 4.7 1/2W
DA23 10DF2T
CA41 47u 16V 105"C
RA49 1K 1/2W
QA01 IRFPE50
S24
LA11 3.5x8x1
LA03 3.5x8x1
ZDA01 HZ18-2
RA07 22 1/4W
RA06 68 1/4W
DA09 1N4148
RA08 10K
RA09 1K 1/4W
RA20 1K 5W MOF(M)
DA15 BA159
ZDA03 HZ20-2
CA11 100P 50V
RA10 4.7K
CA50 1000P 50V
RA11 .12 2W MOF
CA18 N.C
RA21 N.C
CA17 330P 1KV
CA52 330P 1KV
RA48 100
RA12 27K
CA16 .01u 50V
RA50 .2K
CA40 .1u
ICA04 4N35T
DA29 1N4148
DA13 1N4148
RA16 10K
RA25 100
RA17 10K
RA60 470
DA12 1N4148
RA18 100K 1/4W
RA15 1M
CA15 220u 25V 105"C
QA03 C1213
RA40 10K
CA32 .1u 50V
RA24 1K
QA05 C1213
CA14 2200P
RA42 47
RA27 1
QA02 C1213
RA26 100
DA24 1N4148
ICA05 TL431CLP
RA28 47K
CA29 .47u 105"C
VRA01 200
RA33 750 1% 1/4W
RA47 4.7K
POW1
SHEET-5
DEGAU
SHEET-5
POW2
SHEET-5
+5V
SHEET-5
CA48 N.C
RA36 1K
QA06 C1213
RA38 47K
HTL
SHEET1,2,3
ICC04 4013
CA47 33K
RA34 390
WA04 N.C
+76V
GND
DA21 1N4148
RA37 10K
CA30 470P
WA07 TO W01
GND
+180V
DA16 FUF5407
RA46 100 2W (M)
CA39 100P 1KV
CA22 33u 200V 105"C
LA04 60uH
CA21 100u 200V 105"C
RA23 120K 1W MOF(M)
+180V
SHEET1,2
+76V
SHEET-1
DA17 FUF5407
LA10 3.5x6x1x2
CA38 100P 1KV
RA45 100 2W (M)
CA24 220u 100V 105"C
+180V
N.C
+76V
GND
HEATER
R-CUT
B-CUT
+5V
OSD
+17V
WA03 TO WV02
DA18 FUF5404
LA05 3.5x6x1
CA25 1000u 16V 105"C
RA30 3.9 2W MOF (M)
OSD
SHEET-5
B-CUT
SHEET-5
R-CUT
SHEET-5
-12V
SHEET-
+17V
SHEET-
LA07 240uH/.5A
RA58 JUMPER
DA19 FUF5404
DA06 1N4148
CA26 2200u 16V 105"C
DA20 FUF5404
LA08 3.5x8x1
LA09 JUMPER 5.0x0.6mm
+12V
CA27 1000P 1KV
RAG1 33 1/2W
CA20 470u 16V 105"C
RA22 .51 1W MOF(M)
CA28 1000u 25V 105"C
ICA07 7812 GND
IN OUT
CA23 1u 50V 105"C
CA35 100u 16V 105"C
RA29 62K 1W MF(1%)
NOTE : NC MEANS "NOT CONNECTED ON PCB BOARD"
ALL RESISTORS 1/8 WATT,5% UNLESS NOTED.
ALL RESISTOR VALUES IN OHMS UNLESS NOTED.
ALL CAPACITORS 50 VOLT UNLESS NOTED.
ALL CAPACITOR VALUES IN uF UNLESS NOTED.
M = METAL 1%
MODEL PF790 (3019-0152-0160)
CIRCUITRY POWER
ViewSonic Corporation
SHEET 6 OF 7
REV: 00
PCB REV: 05
APPROVED BY:
CHECKED BY:
PCB P/N 017422400706
ECN NO ECN997005
FILE: P790-P00.SCH 8992M207.PCB
DATE 09-20-99



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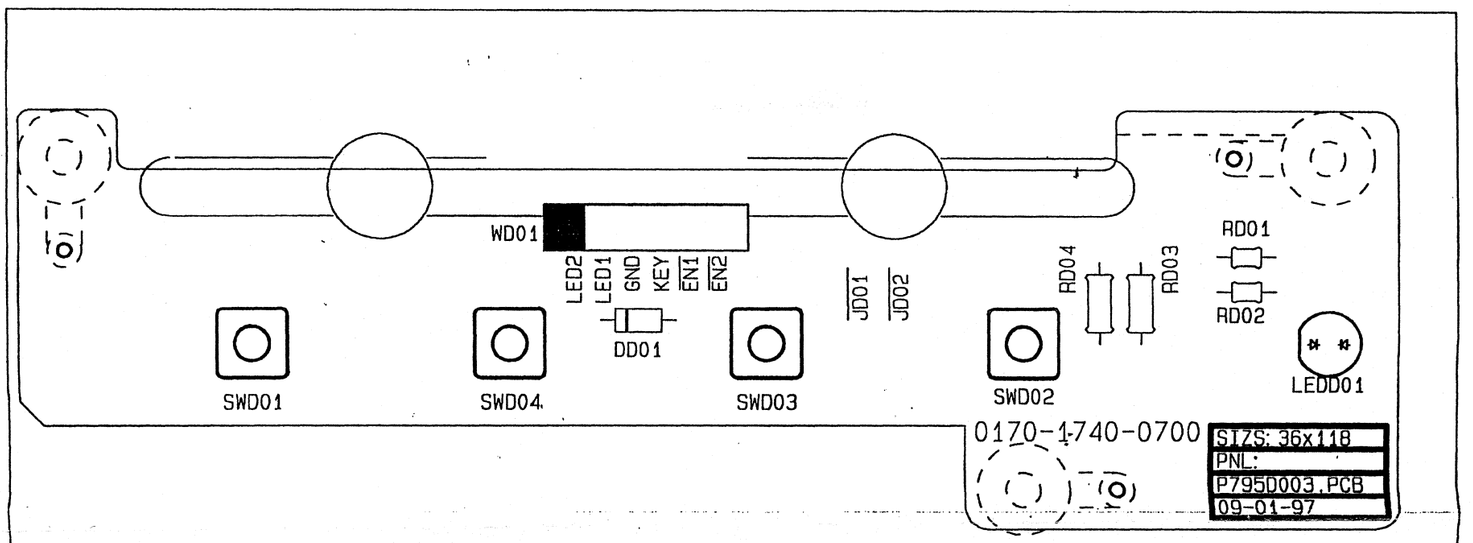
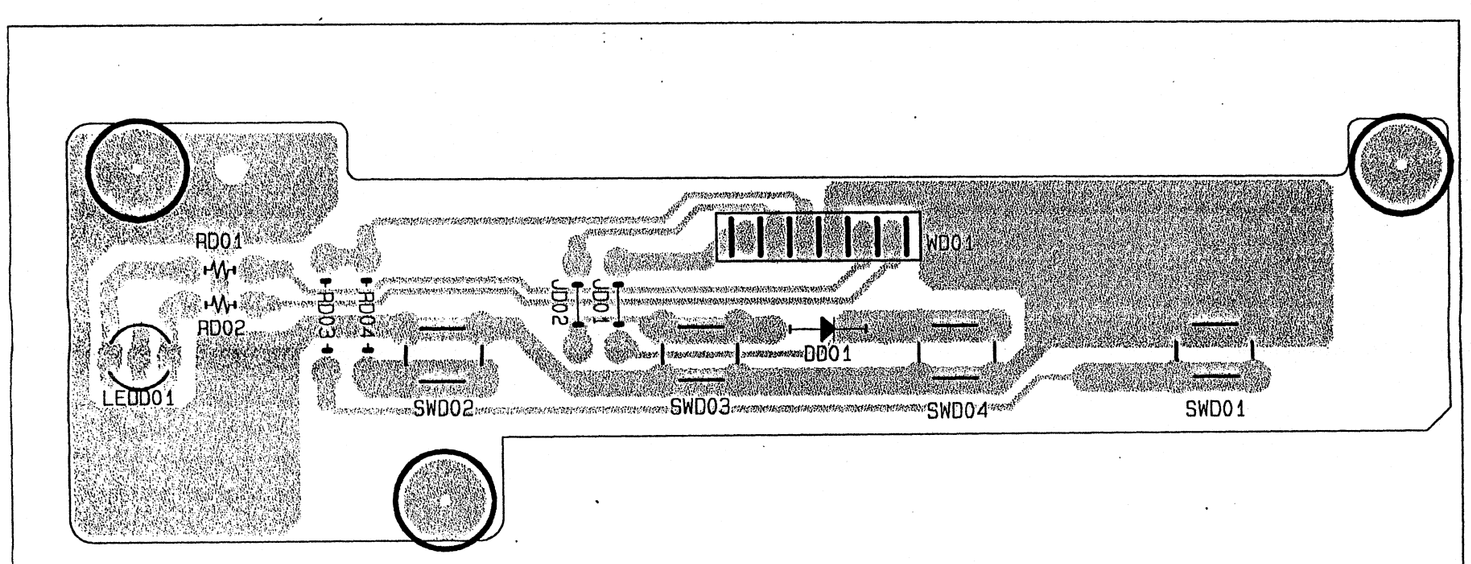


ViewSonic Corporation	MODEL: **PF790** (17"19")
P/N: 0170-1740-0700 V0 1/0z 1.6T	
Q'TY: 40 PCS	P795D003.PCB
DATE: 09-01-97	REC DATE: 09-08

COMP SIDE TEXT



SOLDER SIDE TEXT

	MODEL: (17"19")
P/N: 0170-1740-0700 V0 1/0z 1.6T	
Q'TY: 40 PCS	P795D003.PCB
DATE: 09-01-97	REC DATE: 09-08

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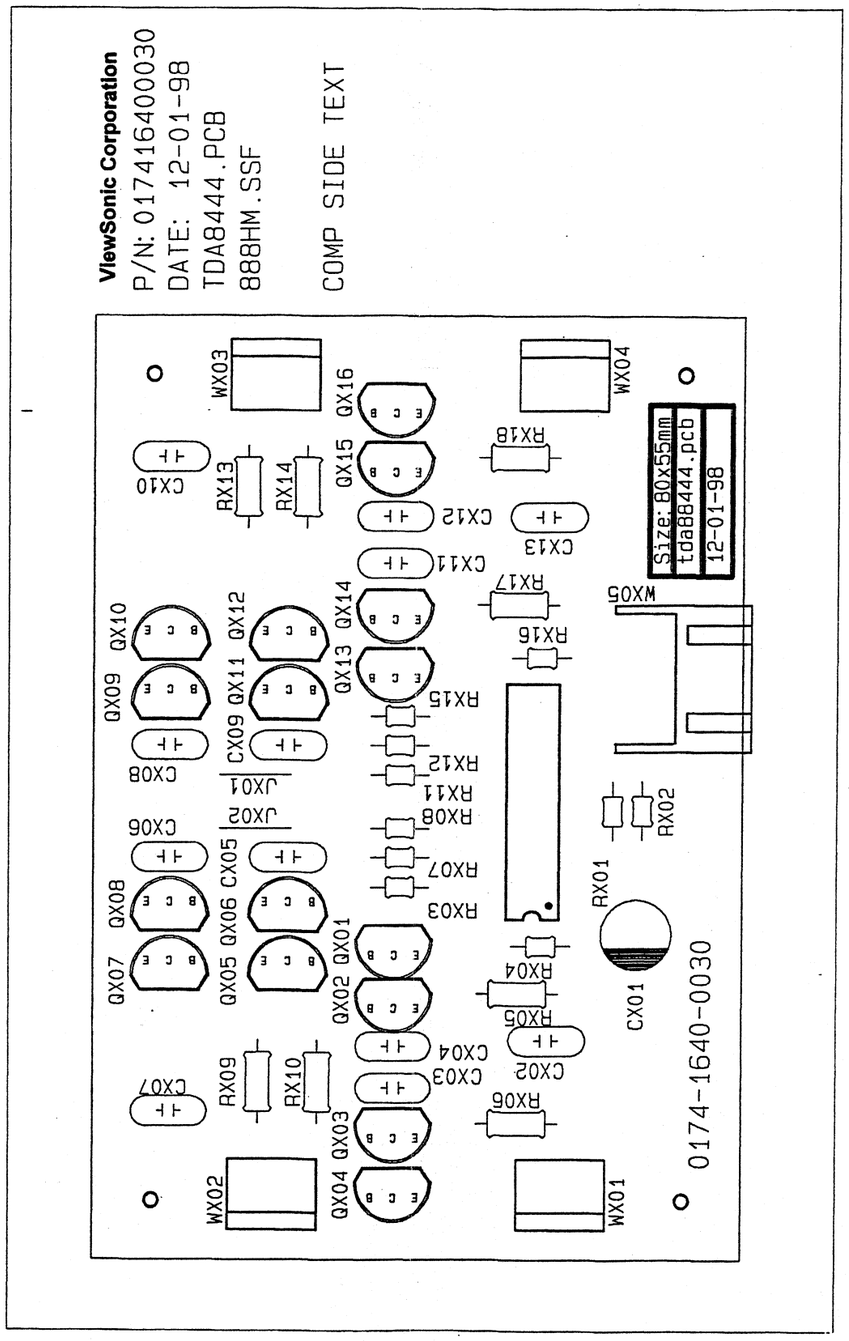

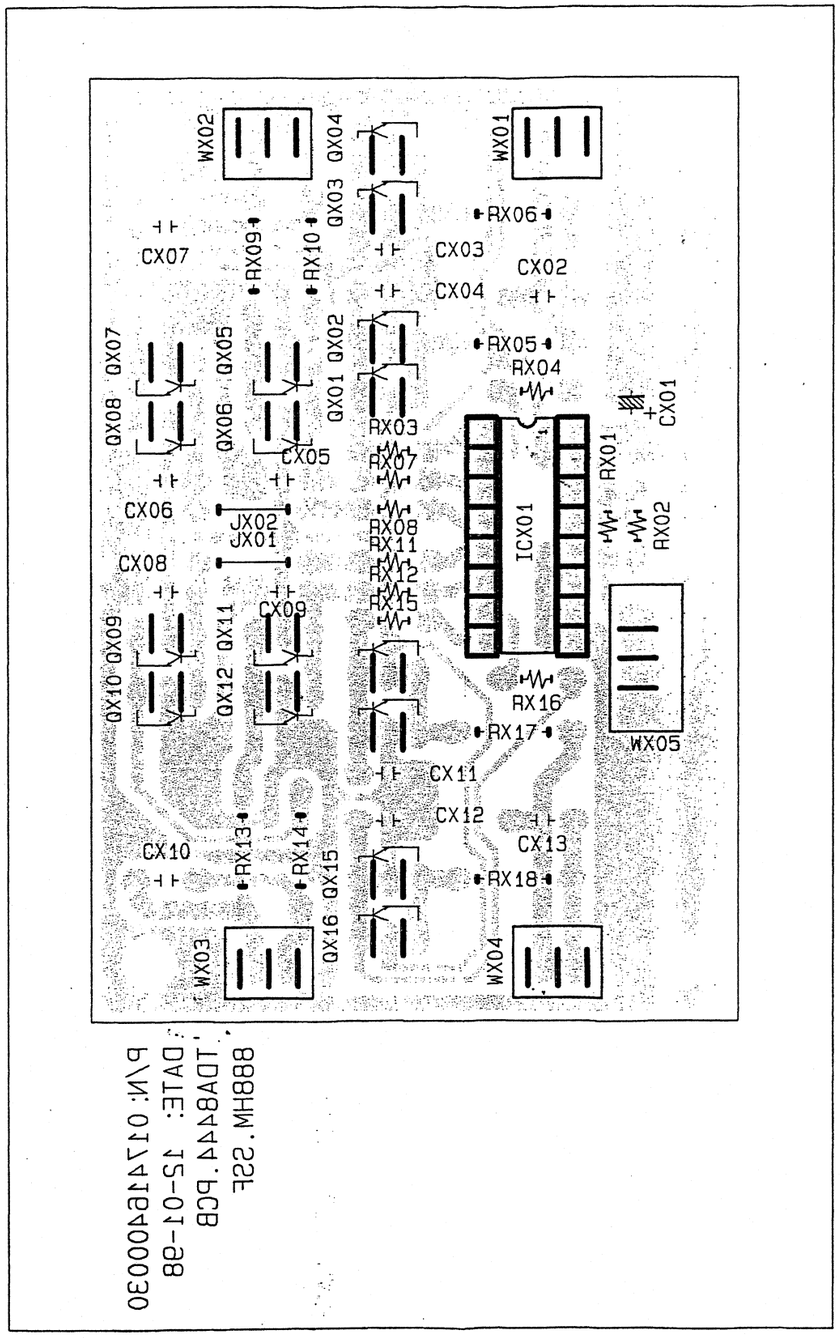

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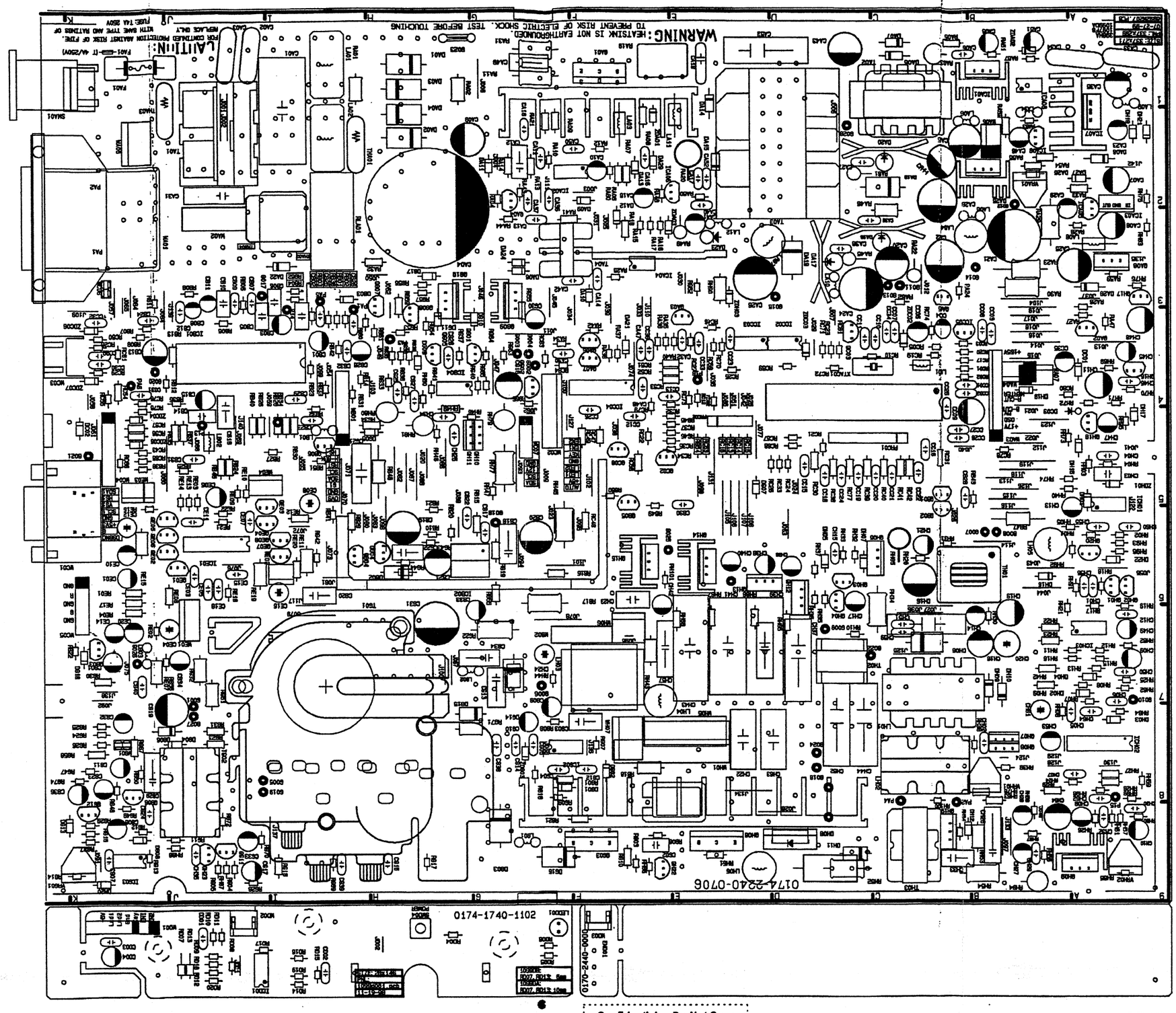

COMP SIDE TEXT

DRAWING BY:
CHECK BY:

SCALE:
8884N.SSF
8992M207.PCB
REC DATE 08-03
DATE 07-27-99
Q'TY: 15 PCS
MAL SIZE 33/X299
CEM1 3/OZ 1.6t
AT39BH (USB)

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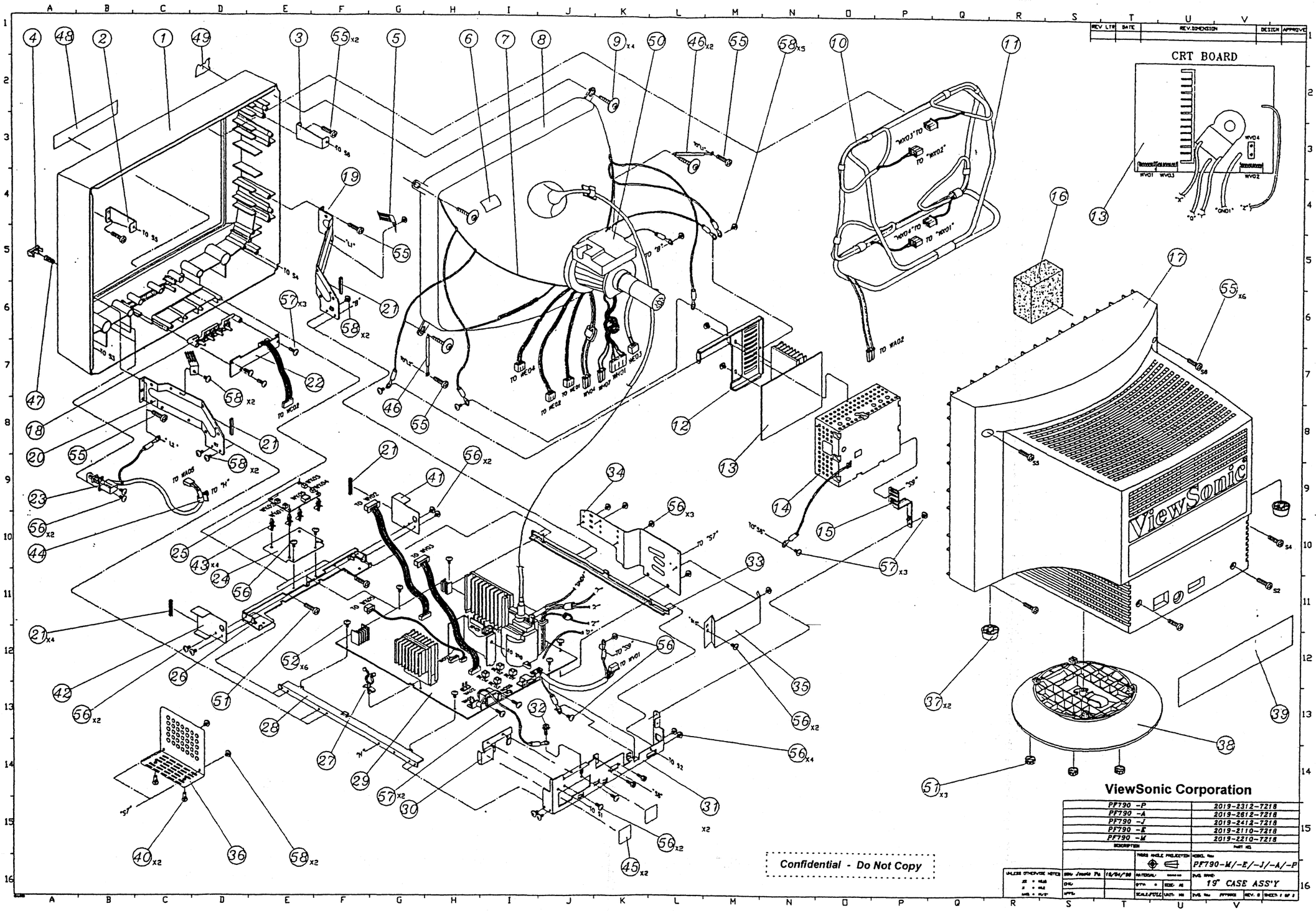
PF790


CRT BOARD
ViewSonic
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ViewSonic Corporation
PF790 -P 2019-2312-7218
PF790 -A 2019-2612-7218
PF790 -J 2019-2412-7218
PF790 -E 2019-2110-7218
PF790 -M 2019-2210-7218
PF790-M/-E/-J/-A/-P
19" CASE ASS'Y

REV LTR	DATE	REV.DIMENSION	DESIGN	APPROVE
1				

ITEM	PART NO.	DESCRIPTION	QTY
1	1701-0103-2010	BEZEL PF790 G7397 PC+ABS	1
2	1712-0100-0510	BACK COVER BRACKET RIGHT/AT1099DA,P795	1
3	1712-0100-0520	BACK COVER BRACKET LEFT/AT1099DA,795	1
4	1701-0402-2000	POWER KNOB G7397 PF775	1
5	1712-0600-0200	COPPER CLAW	2
6	1936-1500-0100	FAD WARNING LBL AT897D/F/C	1
7	0460-2202-0100	BRAID 0.1'2/112C 1015#18 920mm/AT1097F	1
8	0210-0190-0155	CRT 19" M46LPE21X11 MIT.	1
9	1724-3705-2202	SCREW, BPCTW,#5.0*22L,Zn-Cc	4
10	0333-1900-0520	PURITY 19"77.5ohm 150Ts +PURITY CORNER	1
11	0330-1900-0120	DEGAUSSING 19" 24 ohm 0.45x90Ts	1
12	1712-0300-0030	VIDEO BD SHIELDING	1
13	3019-0132-0151	ASS'Y VIDEO BD PF790	1
14	1712-0500-0161	CTR BD SHIELDING-A	1 Sel
15	1712-0100-4600	VIDEO BD BRACKET AT1097F/P795/PT771	1
16	1947-1500-0050	SPONGE 75Lx75Wx65T AT1099DA,AT1097FB	1
17	1701-0200-6010	BACK COVER PF790 D-SUB ONLY	1
18	1701-0402-1000	FUNCTION KNOB G7397 PF775	1
19	1712-0100-0151	CHASSIS BKT LEFT	1
20	1712-0100-0163	CHASSIS BKT RIGHT	1
21	1701-1600-0100	MOVABLE BUSHINGS/US-12.31	4
22	3019-0022-0156	ASS'Y DISPLAY BD P795,PT771	1
23	0220-2020-0261	SW PUSH BOTTON SFDLD11E7U-AA	1
24	1712-0100-0570	HOLD FOR OPTION BD	1
25	3019-0012-0159	ASS'Y OPTION BD AT1099DA	1
26	1712-0100-0590	CHASSIS BKT FRONT	1
27	1701-1500-1700	WIRE CLIPS/TA8-10	1
28	1712-0100-0440	FRAME BKT RIGHT/AT1097F	1
29	3019-0152-0160	ASS'Y MAIN/PWR/CTRL BD PF790	1
30	1712-0100-0470	AC BKT	1
31	1712-0100-3201	CHASSIS BKT REAR/AT897D	1
32	1724-3804-0802	SCREW,PBATW,M4*8L,Zz-Cc	1
33	1712-0100-0450	FRAME BKT LEFT/AT1097F	1
34	1712-0300-0022	HEAT SINK FOR EMI	1

ITEM	PART NO.	DESCRIPTION	QTY
35	1712-0300-0090	HEAT SINK FOR RING SHIELDING	1
36	1712-0500-0140	SHIELD PLATE FOR EMI	1
37	1701-1000-0100	PLASTIC FOOT /GL-24H	2
38	3019-0072-0301	BASE ASSY	1
39	1936-1100-1360	B/C LBL PF790 -M/-E/-J/-A TC099	1
40	1701-1500-0900	SPACER SUPPORTS/FCB-10	2
41	1712-0100-0620	CRT HOLDER LEFT /P795	1
42	1712-0100-4400	CRT HOLDER RIGHT /P795	1
43	1701-1500-0050	PCBA SPACER SUPPORT/LCBS-6	4
44	1701-1500-0010	WIRE CLIPS NYLON 66(UL)	2
45	1701-0800-0080	PALTE PT775-6	2
46	1712-0800-0040	GROUNDING CLIPS WC-3L-DC	1
47	1712-0700-0600	SPRING /PT771/P795	1
48	1936-1600-0010	POP LBL VIEWSONIC PF790 -M ONLY	1
49	1936-1000-0100	V. SONIC LOGO (AL.PLATE)	1
50	1947-1700-0160	COPPER TAPE 85x50mm	1
51	1701-1000-0200	BASE FOOT	3
55	1724-2304-1402	SCREW,BBC,M4*14L,Zn-Cc	12
56	1724-2603-0602	SCREW,BTCW,M3*6L,Zn-Cc	-
57	1724-2603-1002	SCREW,BTCW,M3*10L,Zn-Cc	7
58	1724-2603-0802	SCREW,BTCW,M3*8L,Zz-Cc	-

PF790 -P	*2019-2312-7218*
PF790 -A	*2019-2612-7218*
PF790 -J	*2019-2412-7218*
PF790 -E	*2019-2110-7218*
PF790 -M	*2019-2210-7218*
DESCRIPTION	PART NO.

ViewSonic Corporation

THIRD ANGLE PROJECTION

MODEL No.: *PF790-M/-E/-J/-A/-P*

UNLESS OTHERWISE NOTED
.XX = ±0.10
.X = ±0.2
ANG. = ±1/2°

DSN.: *Jessie Yu* *10/04/99*
CHK.:
APPD.:

MATERIAL: ******
D'TY: * SIZE: A4
SCALE: *:* UNIT: MM

DWG. NAME: *19" CASE ASS'Y*

DWG. No.: *PF790CA* REV. *01* SHEET: *2 OF 2*

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PF790
(01.09)